

DEVELOPMENT DIGEST

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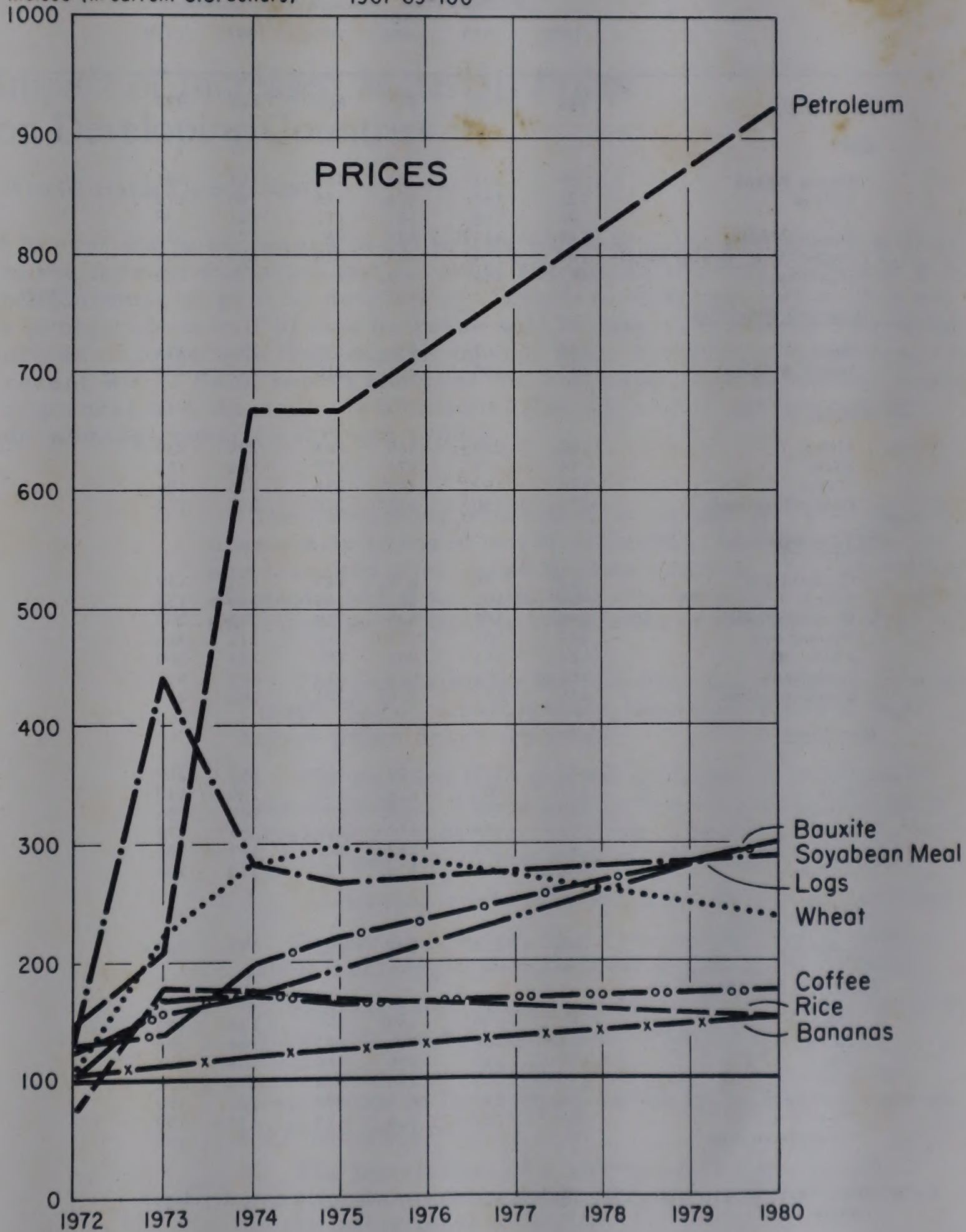
[CORRECTION: The Table of Contents of the preceding issue, April 1974, omitted reference to the article "A Smallholder Milk Cooperative in Gujarat, India by E. Hunt McCauley. Mr. McCauley's article appears on pages 45-52.]

(Unless otherwise indicated,
currency is expressed in U. S. dollars.)

RAW MATERIALS

Indices (in current U.S. dollars)

1967-69=100



Source: World Bank Projections.
(See next page)

WORLD BANK PROJECTIONS, SEE FOLLOWING ARTICLE.

Indices of Commodity Prices
(in current US\$)
1967-69 = 100

	<u>Actual Prices</u>			<u>Forecast Prices*</u>		
	1972	1973	Jan. 1974	1974	1975	1980
<u>Petroleum</u>	146	208	665	665	665	923
<u>Food</u>						
Cocoa Beans	89	181	181	181	181	181
Coffee	125	155	174	175	163	175
Tea	98	100	117	116	121	128
Sugar (World)	317	413	647	783	522	522
Sugar (U. S. preferential)	123	137	169	215	185	209
Bananas	107	114	n. a.	120	125	150
<u>Livestock Products</u>						
Beef	159	207	216	231	231	271
Hides & Skins	163	205	n. a.	216	237	289
<u>Grains</u>						
Wheat	106	219	319	284	299	239
Rice	74	177	271	177	164	152
Maize	110	192	240	235	216	196
Grain Sorghum	114	190	236	224	214	194
<u>Fats & Oils</u>						
Coconut Oil	64	89	n. a.	123	123	117
Copra	66	166	352	144	140	133
Groundnut Oil	144	185	325	240	233	205
Groundnuts	142	207	278	214	213	286
Palm Oil	114	201	303	206	205	200
Fishmeal	165	374	418	414	414	431
Soyabean Meal	133	443	n. a.	284	268	289
<u>Non-Food</u>						
Cotton	127	177	300	267	250	217
Jute	111	105	n. a.	121	126	140
Sisal	142	303	n. a.	246	200	196
Wool	141	304	317	290	261	275
Rubber	82	164	252	191	159	205
Tobacco	101	103	n. a.	106	113	146
<u>Timber</u>						
Logs	103	168	242	175	193	300
<u>Metals & Minerals</u>						
Copper	83	140	159	155	138	172
Lead	119	169	223	157	144	204
Tin	115	147	199	168	168	235
Zinc	138	311	486	395	242	302
Bauxite	130	140	n. a.	200	220	300
Iron Ore	108	157	n. a.	137	130	199
Manganese Ore	100	113	170	100	93	155

*Forecast prices reflect High Variant growth assumptions for the developed countries.

Impact of Increased Materials Prices on Developing Countries

World Bank Group Staff

[Recent sharp increases in oil prices will add some \$70 billion a year to the foreign exchange cost of world petroleum imports, of which \$10 billion must be paid by developing countries. For these countries as a group, about half of this increase will be offset in 1974 by increased prices of materials they export; but for many the impact is severe. A recent World Bank report analyzes the estimated foreign exchange consequences and the need for additional financing in 40 oil-importing developing countries through 1980.]

The developing countries, as of March 1974, face a drastically changed world economic situation from the one foreseen even three months earlier. The principal elements which we must take into account as we reassess their prospects for the remainder of the decade are:

1. The substantially increased price of energy (even though there remain widely divergent views about future price developments);
2. The current high prices of many other primary commodities. These prices benefit many exporting developing countries, but they also constitute a substantial portion of the import bill of still others;
3. Increasing costs of manufactured goods imports;
4. Supply shortages, and consequent higher prices, of such strategic development inputs as fertilizer;
5. Shortages of cereal products, made more serious by the depletion of global stocks;
6. Continued worldwide inflation, which creates uncertainty in investment decisions and development planning generally;
7. The possibility of a slowdown in the rate of growth of the industrialized countries, exacerbated by the adjustment to higher energy costs.

Although attention has focused on the increase in the price of oil, two of the other major problems listed above are likely to have an equally severe impact on a number of countries. The first and most important of these is the uncertain outlook for the economies of the industrialized countries. The level of economic activity in those countries is one of the principal determinants of the foreign exchange earning capacity of the developing nations, and hence of their investment levels and growth rates.... Even if the industrial countries recover quickly from the oil price increases and find ways to deal with their balance of payments deficits, their reduced rates of growth will cause the growth rates of many developing countries, between now and 1980, to be substantially below the levels which were thought likely until recently.

A second problem is the shortage of fertilizers and of food. These shortages were evident even before the changes in oil prices, but they are much exacerbated by the current situation. The price of urea fertilizer has risen almost as rapidly as that of crude oil.... The result is a heavy additional foreign exchange outlay by developing countries in 1974, estimated at \$1.2 billion over 1973 for the same quantity of fertilizer, combined with the spectre of reduced crops. The shortage of fertilizer, combined with the growing demand for food, means that food grains will remain in short supply at rising prices, which will also require heavy additional foreign exchange expenditures on food imports. Wheat, the principal foodgrain traded, has tripled in price since 1967-69. Compared to the 1970-72 average, developing countries may have to spend \$8.4 billion more on cereal imports in 1974. Some of the countries which have the least resilience in meeting the additional cost of oil imports are also those which depend heavily on fertilizer imports and whose agricultural output is highly sensitive to inadequate soil nutrients.

Last fall the World Bank estimated that the developing countries could, on the average, achieve the 6% rate of growth which was the minimum objective of the Second Development Decade. Our revised projections, of March 1974, show that this is most unlikely; in the best of circumstances the maintenance of substantial development progress will require considerably more external capital than previously projected. The capacity of individual developing countries to respond to the immediate problems of 1974 and 1975 varies widely. There are some countries — for example, Mexico, Turkey, Brazil and Malaysia — which can cope with them because of accumulated reserves, continued high export prices, and ready access to capital markets. However, there are other countries, notably such low income countries as India, Bangladesh, and Sri Lanka, which have little resilience and which will require substantial sums of additional external capital on concessional terms to sustain growth.

The Long-Term Adjustment Process, 1974-1980

The increase in the price for oil, which became effective in January 1974, created a structural disequilibrium of major proportions in the balance

Per Capital Income Categories for 40 Oil-Importing Developing Countries.
(Based on 1971 GNP and Population)

Higher Income (above \$340)	Middle Income (\$200-340)	Lower Income (less than \$200)
Argentina	Cameroon	Bangladesh
Brazil	Ecuador*	Bolivia
Chile	Egypt	Ethiopia
Colombia	Ghana	India
Dominican Republic	Ivory Coast	Kenya
Greece	Korea	Mali
Guatemala	Liberia	Pakistan
Malaysia	Morocco	Sri Lanka
Mexico	Philippines	Sudan
Peru	Senegal	Tanzania
Turkey	Sierra Leone	Uganda
Uruguay	Syria	Zaire
Yugoslavia	Thailand	
Zambia	Tunisia	

*Ecuador has recently become an oil exporter on a small scale.

of payments of both developed and developing countries. The adjustments in patterns of investment, production, trade and capital flows needed to offset it are bound to have a significant impact on the growth prospects of most countries. This paper provides a preliminary assessment of the long-term perspective against which to view the immediate problems facing the developing countries.

To develop a preliminary estimate of the magnitudes involved in this overall adjustment in the world economy, we started from the December 1973 Bank projections of economic growth in 40 developing countries which import oil

(see box). We then took into account the changes in commodity price projections, and the long-range impact on these countries of the anticipated slowdown in the rates of growth of the industrialized countries. Since the magnitude and duration of this slowdown will depend on the effectiveness with which the worldwide adjustment process is managed, and cannot be forecast with any accuracy, we have based our analysis on two alternative assumptions for each of the major developed regions. From these assumptions, we obtain preliminary estimates of the exports of the developing countries and of their overall rates of growth through 1980. The results demonstrate the vulnerability of a group of low and middle income countries, in which the longer term effects of slower export expansion and falling export prices would compound the initial effects of higher petroleum costs.

Growth of the industrial countries. Even before the increase in the price of petroleum, it had been anticipated that the growth in the industrial countries during 1974 would slow down. Compared to 6.6 percent increase in real GNP for the OECD countries in 1973, the outlook for 1974, indicated a rate of growth of about 3.75 percent. Continued inflation was also projected, with the prospect of a rate of inflation of 7.5-8 percent in 1974, exceeding the already high rate of 6.5 percent in 1973. Despite those forecasts of unfavorable conditions in the industrialized countries, it was believed that the favorable terms of trade and a continued growth of export earnings would support a rate of growth in developing countries averaging about 6 percent per year.

Obviously those forecasts for the OECD countries are no longer relevant, but it is difficult to make definitive new estimates. The magnitude of the capital flows required to meet the unprecedented trade account deficit of the combined OECD area, presently estimated at some \$44 billion in 1974, creates uncertainties. The distribution of that deficit among OECD countries in accordance with the size of the oil price impact on each country poses even more serious problems. Efforts on the part of any one of the industrial countries to approach equilibrium in the current account would be at the expense of other oil-importing countries, and could worsen growth prospects not only for them but for the developing world as well. In order to give full weight to these uncertainties, two alternative patterns of their projected growth, a "Low Variant" and a "High Variant", have been assumed, and are shown in Table 1. The High Variant assumes low growth in the industrial countries in 1974, followed by a rapid recovery to rates of growth of about 6 percent per annum by 1976-1980, in line with those experienced in recent years. The Low Variant presents a significantly lower growth pattern starting with minimal growth in 1974, followed in subsequent years by growth rates well below historical averages. The low growth path is predicated on the assumption that energy supplies will be a constraint on growth for some years, combined with shifts in the allocation of investment resources to energy substitutes with long gestation periods and high capital intensity. (It should be noted that the latest OECD estimates of growth for those countries in 1974 are below the levels shown in this Low Variant.)

Table 1. Alternative Assumptions of Annual Rates of Growth in GNP of Developed Regions -- 1974 to 1980

(percent per annum)

	1972 (Actual)	1973 (Est.)	High Variant			Low Variant		
			1974	1975	1976- 1980	1974	1975	1976- 1980
Japan and Oceania	8.5	10.3	4.0	6.0	7.0	3.0	5.0	7.5
Western Europe	4.3	6.0	2.0	2.5	5.5	0.5	1.5	3.0
United States, Canada	6.1	6.1	2.3	3.5	6.0	1.5	2.5	3.5
Average, All OECD Countries	5.7	6.6	2.4	3.5	6.0	1.3	2.5	3.9

Given these growth patterns, alternative projections of the major economic variables of developing countries can be made, including imports and GNP growth. The projections for the 40 developing countries are divided into Low, Middle and Higher Income country groups to better define developments and to permit comparisons with the December 1973 projections. References to developing countries in the text and in the tables are to these 40 developing countries, unless otherwise indicated.

Export Volume. Table 2 shows how the different commodity groups are influenced by alternative rates of growth in the industrial countries. Under the High Variant, the reduction in export growth rates of the various commodity groups is less than 10 percent; but under the Low Variant the level of export growth shows rates 30-40 percent lower than those projected earlier. The drop in the growth rates is somewhat less severe for those commodities with lower income elasticities (food, agricultural products) and somewhat more severe for items having higher income elasticities (manufactures and services). This last group has been the most dynamic element in export growth. Decreases in growth rates of this group explain a large proportion of the decline in total export growth for developing countries.

Table 2. Volume of Exports by 40 Developing Countries to Developed Regions, 1973 - 1980.

(Average Annual Percentage Rates of Growth)

<u>Export Volume by Commodity Group</u>	<u>December 1973 Projections</u>	<u>March 1974 Projections</u>	
		<u>High Variant</u>	<u>Low Variant</u>
Food and Food Products	3.5%	3.4%	2.6%
Non-Food Agricultural Products	1.9	1.7	1.5
Metal and Minerals	5.7	5.3	3.7
Petroleum Products	9.8	8.9	6.2
Manufactures	16.3	15.9	11.1
Services	13.5	12.7	8.7
<u>Export Volume by Income Group of Exporting Countries</u>			
Higher	9.2%	8.9%	7.1%
Middle	7.5	7.2	5.4
Lower	6.1	5.6	4.2
of which:			
India	5.7	5.3	3.6
Other Countries	6.3	6.2	4.5
Total	8.2	7.8	6.1

Previous growth projections of the industrial countries indicated that the volume of their imports from the developing countries would rise by over 8 percent per year between 1973 and 1980. As shown in Table 2 with the High Variant growth pattern which implies a short economic slowdown in the industrialized countries, the export growth of the developing countries would be reduced only slightly to an average of about 7.8 percent. By contrast, the Low Variant implies a reduction of the export growth rate by 25 percent to an annual rate of 6 percent over the period. The impact of slower export growth in the developing countries is more detrimental to the low-income countries whose exports are dominated by slow-growing, price-inelastic commodities. The impact on India is worse than for the low-income groups as a whole since its exports contain both slow-growing, price-inelastic commodities and an increasing share of manufactured goods

International prices and terms of trade. Prices of primary products in world trade, which had remained fairly stable through the late sixties and up to the middle of 1972, have been increasing very rapidly since then. The high average prices of primary products exported by all developing countries in 1973 reflected to some extent the high level of demand in a year when exceptionally rapid growth prevailed in almost all industrial countries. Further, high rates of inflation and wide fluctuations of exchange rates between major currencies may have led to speculative demand for commodities. The failure of foodgrains crops throughout the world in the 1972/73 crop year also had far-reaching effects on the prices of various commodities.

Table 3. Export Prices of Primary Commodities
(Index value in constant dollars, 1967-69 = 100)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974*</u>	<u>1975*</u>	<u>1980*</u>
Food and Beverages	115	116	131	181	297	245	250
Agricultural Raw Materials	95	92	115	201	213	199	230
Minerals and Metals	111	102	104	146	175	158	205
All Commodities except Petroleum	108	105	119	176	244	211	235
Petroleum	96	123	139	200	665	665	920

*Estimates based on the High Variant assumptions

Although price declines are foreseen for some primary commodities, the average price level in 1974 will probably remain above the 1973 level. Markets for foodgrains will remain tight; the natural products which compete with petroleum-based synthetic products will benefit from an improved competitive position; metals and minerals prices may weaken most in relative terms. Speculative factors, by their nature unpredictable, may still

favor high prices in view of the accelerated inflation in industrial countries and continued exchange rate uncertainty. In terms of the export prospects of the developing countries, this factor may to some extent offset the effects of the economic slowdown in the industrial countries, at least in 1974.

Beyond 1974, price projections for primary commodities depend on the assumptions made with respect to growth in the industrial countries as those are the main markets for such products. In the case of the High Variant (rapid recovery from the low projected growth in 1974), primary commodity prices are likely to maintain a fairly high level as compared to the years before 1972: on average, an increase in current dollars is projected by 4 percent per year after 1974, equivalent to a decrease of only 1.5 percent per year in constant dollars. Alternatively, assuming the lower growth path for the industrial countries, primary commodity prices, measured in current dollars, would increase by only 2 percent per year from 1974 onward; this would be an annual average decline of at least 3.5 percent in real terms. (Price projections for individual commodities in current dollars, based on High Variant growth assumptions, are presented in the table on page 2.)

The increase of export prices has been more pronounced in recent years in the developing countries with relatively higher income — in most cases these have a larger share of manufactured goods in their total exports. This pattern is likely to apply also in the coming years. The Higher Income group is therefore in a better position to absorb the higher import prices. Still, even under the most favorable assumptions regarding growth in the industrial countries, it remains probable that for the developing countries as a group — excepting oil-exporting countries — the terms of trade will worsen between 1975 and 1980, probably reaching levels prevailing in the late sixties and wiping out the substantial terms of trade gains of recent years. The prospective deterioration in the terms of trade was marked even in the earlier projections for the low-income countries, but it is considerably more severe in the new projections on both the High and Low Variants.

Table 4. Terms of Trade for 40 Developing Countries: 1972 - 1980.

(1967-69 = 100)

	<u>December 1973 Projections</u>			<u>March 1974 Projections</u>					
	<u>High Income</u>	<u>Middle Income</u>	<u>Low Income</u>	<u>High Variant</u>			<u>Low Variant</u>		
				<u>High Income</u>	<u>Middle Income</u>	<u>Low Income</u>	<u>High Income</u>	<u>Middle Income</u>	<u>Low Income</u>
1972 (Actual)	105	106	106	105	106	106	105	106	106
1973 (Est.)	123	122	111	123	122	111	123	122	111
1974 (Proj.)	104	103	90	103	102	89	103	101	89
1980 (Proj.)	104	103	89	98	97	82	88	87	70

Import capacity. The worsening terms of trade and the reduced growth in the volume of exports will affect the import purchasing power of exports. The capacity to import depends also on the net capital flows received by the developing countries. It is assumed here that no reduction will be made in those capital flows as a consequence of recent developments. Table 5 shows the import capacity of the 40 developing countries based on their projected export earnings plus projected net capital flows. The difference in import capacity between the earlier projections and the High Variant are particularly striking for the Low Income countries. The growth rate of import capacity declines by 12 percent for the High Income countries whereas it declines by 37 percent for the Low Income countries. Under the Low Variant the Low Income countries face a declining import capacity with presently projected capital flows.

Table 5. Average Annual Rates of Growth in Import Capacity and GDP of 40 Developing Countries, 1973 - 80, by Income Group

<u>Growth Rates for Import Capacity</u>	<u>December 1973 Projections</u>	<u>March 1974 Projections</u>	
		<u>High Variant</u>	<u>Low Variant</u>
High Income	8.3%	7.3%	4.4%
Middle Income	6.4	5.4	2.7
Low Income	3.2	2.0	-1.0
<u>Growth Rates for GDP</u>			
High Income	7.3	6.5	3.9
Middle Income	6.2	5.3	2.3
Low Income	3.3	2.4	-0.2
of which:			
India	2.4	1.6	-0.7
Other Countries	4.9	3.8	0.7
Average	6.0	4.9	1.9

GDP Growth. Taking the projected export earnings, using the import elasticities for growth in GDP observed in the past, and assuming no change in previously estimated capital flows, it is possible to project likely GDP growth rates in the developing countries by country groups (see Table 5). [Note: The World Bank is currently working on more detailed, comprehensive growth rate projections which may show higher rates for the low income countries than those in this table.] Comparison of the three projections reveals that the effect of the slowing of economic growth in the industrial countries is to lower the expected growth rate of the developing countries as a group from the 6 percent rate projected

earlier to 5 percent under the High Variant and 2 percent under the Low Variant. Moreover, the impact differs considerably among the three groups. Under the High Variant the impact on the Middle or High Income countries is moderate, but the rate of economic growth of the Low Income group is reduced below the rate of population growth. Under the Low Variant the total output of the Low Income group will essentially stagnate for the rest of the decade in the face of continued population growth. The Low Variant projections may to some extent overstate the effect of the import constraint on economic development, particularly in countries with large subsistence sectors which do not depend on imports. However, even if the Low Income countries grow more rapidly, say at a rate equal to their population growth rate, the average growth for all developing countries under the Low Variant would still only be about 2.5 percent per year, or less than half the target of the Second Development Decade.

This analysis emphasizes the importance of sound and coordinated economic management in the industrial countries, in adjusting to the balance of payments deficits, not only for their own sake but for that of the developing countries as well. A slowdown in their long-term growth would have serious effects on all developing countries, compounding in a major way the problems already faced by them. But even sustained growth in the industrialized countries will not be sufficient to enable a number of developing countries to cope with either the immediate impact of higher oil prices or the long-term costs of the adjustment process. For that they will need additional quantities of external capital.

Alternatives and consequences of adjustment. To understand the need of the developing countries for additional capital requirements to meet the problems outlined above, it is essential to recognize the central conclusion of the preceding analysis: the problem facing the developing countries is not a temporary disequilibrium but one which will endure for many years. The reduced rate of growth in the volume of exports and the projected deterioration of the terms of trade initially will, where possible, be met by the use of reserves. But in those countries which cannot safely reduce reserves below present levels, the point will soon be reached where, without access to additional external capital, the only recourse is reduction of imports, reduction in investment levels and reductions in growth rates.

Given less favorable export prospects and increased import demands, many countries will have to reorder their investment priorities and turn to increased import substitution. An obvious area for examination is the compression of less essential energy uses and the development of alternative domestic sources of supply. However, the problems posed in this respect for many of the developing countries are more difficult than for the industrialized countries. First, the former countries use a much larger proportion of their energy consumption for essential industrial and transportation needs than for less productive

residential, commercial and private transportation uses. As a result, their potential for energy conservation without a drop in production is limited. Secondly, their energy base tends to be both less flexible and less diversified than in the industrial countries. Thirdly, generally less is known about their energy resource base, and development of such resources often requires much greater investment in infrastructure to make them accessible. Finally, the capital investment for developing alternative energy sources is likely to become available only by significant diversions from other development programs, or from expenditures in such areas as health and education which improve the quality of life for the majority of the population.

Should our projection of a deterioration of terms of trade and a slowdown in the growth of the volume of exports beyond 1975 prove accurate, a conservative estimate of the additional net requirement for external finance in 1976-80 would be in the order of \$10 to 12 billion per year. These amounts compare with net disbursements of official development assistance in the last four years of about \$7.4 billion annually, and with total net official and private investment flows to the developing countries of about \$15 billion per year. Of the additional amounts required in the long term, about half is needed by the Higher Income countries, which may be able to borrow the funds in the international capital markets at conventional rates. The Middle Income countries may be able to meet perhaps half of their additional needs, about \$3.0 - 3.5 billion per year, at market rates, but the remainder will be needed on terms which contain a significant grant element. The Low Income countries, which are not in a position to borrow at market terms, will require additional net capital inflows, at highly concessionary terms, of the order of \$2.5 - 3.0 billion per year.

The Immediate Problem: 1974 and 1975

This section provides initial estimates of the net effects of recent increases in the prices of oil and other commodities on the balance of payments of the developing countries in 1974 and 1975. Those projections reflect the flows of goods, services and capital associated with the planned growth rates of the 40 countries. The capital flows originally projected for 1974 and 1975 were adequate to support the development objectives. The new projections do not reflect any changes in the volumes of imports and exports as compared to those made in the fall of 1973, notwithstanding the possibility that countries may to some extent reduce the levels of their imports under high prices. We have used an estimate for the price of oil of \$8.65 per barrel, even though there remain widely divergent views about the future of this price. On balance, the projections below are likely to err on the side of understating the deterioration in the financial resource position of the developing countries.

Table 6 analyzes estimates of the 1974 and 1975 balance of payments deficits for high, middle and low income countries. The deficits implied by import and export values that result from the new price projections are summarized in the first two columns as the "Current Estimate of the

Resource Gap." The buoyant export prices more than offset the increased prices for non-petroleum products, but when petroleum is included many countries show substantial increases in their trade deficits. To the estimated "Resource Gap" were added "Estimated Increases in Net Capital Transfers" (see Table 6 footnote describing what this includes). The result is an estimate of the "Net Additional Financing Required" for 1974 and 1975. It is important to recognize the necessarily tentative nature of these estimates.

The "Net Additional Financing Required" in 1974 and 1975 can be met by the use of foreign exchange reserves; by the provision of additional external capital of a quickly disbursing nature; or by drawings on IMF facilities, including a Special Facility which the Fund has proposed as a temporary device for meeting the extraordinary needs of the current transition. For the Higher Income countries and for some of the Middle Income countries such additional capital could be obtained by borrowing from the capital markets. The Lower Income countries and some of the Middle Income group will not have access to these capital markets and therefore whatever additional capital they require must come, largely on concessional terms, from governments and international institutions.

We have assumed, in line with assumptions made by the Fund Staff, that in 1974 developing countries will use 20 percent of their reserves available as of December 1973, plus the amount which may become available from the proposed IMF Special Facility. For 1975 we have assumed that they would use a further 20 percent of their remaining reserves, but we have made no assumptions about further recourse to the IMF Special Facility. For 1975 we have assumed that they would use a further 20 percent of their remaining reserves, but we have made no assumptions about further recourse to the IMF Special Facility.

Table 6. Estimates of 1974 and 1975 Balance of Payments Deficits, Possible Sources of Financing for such Deficits and Remaining Gap to be Financed

(figures in US\$ million)

	Current Estimate of Resource Gap		Estimated Increases in Net Capital Transfers Available to meet Resource Gap ^{1/}		Net Additional Financing Required		Potential Use of Reserves and IMF Facilities		Gap to be Financed	
	Increase in '74 over '73	Increase in '75 over '73	Increase in '74 over '73	Increase in '75 over '73	1974	1975	1974	1975	1974	1975
HIGH INCOME COUNTRIES	3010	4161	10	-455	3000	4606	3400	2570	618	2276
MIDDLE INCOME COUNTRIES	1710	2571	2	227	1708	2344	835	725	873	1746
LOW INCOME COUNTRIES	1388	1960	-17	2	1405	1948	762	299	653	1751
TOTAL ALL COUNTRIES	<u>6108</u>	<u>8692</u>	<u>-5</u>	<u>-216</u>	<u>6113</u>	<u>8898</u>	<u>4997</u>	<u>3594</u>	<u>2144</u>	<u>2773</u>

^{1/} Includes net transfer of public and long-term capital, net direct foreign investment, public and private transfers, and workers remittances. Excludes autonomous private flows, reserve changes, short-term capital, and private long-term borrowing.

Subtracting these amounts from the "Net Additional Financing Required" yields the estimate of the resource gap which remains to be financed in 1974 and 1975. Of the 40 countries included in the analysis, 32 appear, in the last two columns of the table, to require the additional financing. [Note: the original report contains more details on financial mechanisms than are included in this excerpt.]

The Role of the World Bank Group

The Bank has a major role in channeling additional resources to the developing countries (both on IBRD terms and on more concessional terms), and to provide assistance to the developing countries in assessing their economic situation and in reorienting their investment programs. Some of these actions can be taken with existing resources; the remainder will require tapping new sources of funds and, possibly, new institutional arrangements. Since a number of initiatives are now being considered, it would be premature to speculate on their outcome. The items below are therefore only suggestions for consideration and discussion rather than definite proposals.

One area for action is to accelerate the flow of disbursements out of presently programmed resources. A second area for Bank activity must be emphasis in our country and sector analysis on assisting member countries in evaluating the changes in their development prospects, analyzing adjustments in the volume and composition of their investment programs, and identifying new projects for financing. Most important, however, is the mobilization of additional resources for lending. Such additional resources might be obtained from different sources and lent on a variety of terms.

These might include: IBRD Lending: After reducing our lending program to those countries which have access to other resources, it would be desirable and appropriate to expand Bank lending to meet the increased requirements for development assistance. The increase will have to be achieved gradually but, as a tentative estimate, might reach \$1 billion per year within 18 to 24 months. (This amount is less than one-third of the long-term capital resources required by the High Income countries. Obviously, any lending objective will have to be assessed carefully in the light of the prospective creditworthiness of countries, the possibilities for expanding our borrowing program, and the capital available from other sources.) Joint Financing: Some of the oil-producing countries may be interested in joint or parallel financing with the Bank, relying on the Bank for project identification, appraisal and supervision. Contributions to Bank Capital: It may be desirable to seek a substantial increase in the capital subscription and voting strength of member countries which are net oil exporters. Their present share in Bank capital is 4.3 percent; conceivably it could rise to 15 percent or more. Concessional Capital: Since IBRD resources can only meet the requirements of countries which are creditworthy, it is essential that additional concessional capital be

mobilized. A first step must be completion of arrangements to make the resources agreed for the fourth replenishment of IDA available as soon as possible. Intermediate Term Lending: Not all of the financing estimated as required on concessional terms is needed on IDA terms. Consideration should therefore be given to an intermediate-term facility. This could be financed in a number of ways, the simplest of which would be if additional loans from governments would be made available at concessional interest rates, say 3 percent, for relending to developing countries.

[Excerpted from "Additional External Capital Requirements of Developing Countries." Mimeo, Washington, D. C. : World Bank Group, March 1974.]

Developing Countries and Non-Fuel Minerals

Bension Varon and Kenji Takeuchi

[Market and price prospects for nine major mineral products are examined in light of the dramatic increase in oil prices recently obtained by OPEC. None of these products seem to offer the same market situation for producers that was found in oil: availability of substitutes and diversity of producers are among the reasons.]

Over the past three years, a dramatic change has taken place in the world market for one key raw material, oil, whose production and reserves are heavily concentrated among the developing countries of the world. Now, as part of the energy crisis, the developed countries of the world face the certain prospect of very much higher fuel costs in coming years, and the continuing threat that adequate supplies may be withheld either for political reasons or in a process of rather one-sided bargaining with the key producer countries in the now-famous OPEC grouping (the Organization of Petroleum Exporting Countries).

Inevitably, the question arises whether a similar transformation may be in store for one or more of the widely traded minerals not used for fuel. From the standpoint of the developing countries that produce substantial shares of these minerals, such a transformation represents a hope — after successive disappointments with aid flows, transfers of know-how, trade liberalization, and international commodity agreements — that they may now succeed in obtaining from advanced countries increased resources through the operation of the market in changed circumstances, and possibly through alliances emulating OPEC. Conversely, for the consuming countries, such a prospect could be alarming.

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However viewed, the future terms of trade in non-fuel minerals can be deeply significant for individual countries, for the overall balance of economic power in the world, for the welfare of very large numbers of people. To what extent is a transformation in prospect?

It is not a question to be answered simply or with firm conviction. Each of the nine major minerals to be examined in this article — iron ore, bauxite, copper, manganese ore, lead, nickel, phosphate rock, zinc and tin — is affected by factors that cause it to differ greatly from the oil situation, and mostly also from others in the group. Moreover, recent history is sprinkled with cases where a change in price factors operated to turn prophecies of scarcity into realities of glut; even in the medium term of five to ten years, predictions of resource supplies and markets are especially affected by too many unforeseeable elements to be subject to assured linear projections. This said, only by initially making such projections, however tentatively, can one see the lay of the land and identify and assess the elements that could change what happens.

Global Supply and Demand for Non-Fuel Minerals

These nine minerals account for 85 percent of the estimated value of world production of all non-fuel minerals; they are also the non-fuel minerals of export interest to the developing countries, accounting in 1970 for 12 percent of the aggregate exports of developing countries. By comparison, oil accounted for 31 percent of these aggregate exports in 1970.

For the period from now to 1980, current forecasts by the staff of the World Bank look for world requirements of these minerals to increase at rates approximating those experienced in the last ten to 15 years. The needs of developing countries should grow at an accelerating pace, offsetting a slowing down in the dramatic recent growth rate of Japan's import demand for raw materials. And there is the crucial overall projection — now perhaps in more doubt than it would have seemed last October — that economic activity in the OECD countries, which are of course the major consumers by far, will grow by about five percent per year in real terms over this period. As Table 1 indicates, this projected growth in demand is uneven among the group. Demand for bauxite, nickel, and phosphate rock is anticipated to increase faster than economic activity generally. Bauxite demand is expected to expand by nine percent per year while tin will only increase by 1.2 percent annually.

It should be noted that these forecasts refer to demand for virgin ore or for primary metal only; they do not include demand for scrap — or rather assume that recovery from so-called secondary sources will account for roughly its present percentage of total supply. For the

Table 1. Projected Average Annual Rates of Increase in Demand for
Nine Non-Fuel Minerals in the Seventies
(percent per year, approximate figures)

Bauxite	9	Copper	4-4.5
Nickel	6	Zinc	4-4.5
Phosphate Rock	5.5	Lead	3
Iron Ore	4-4.5	Tin	1.2
Manganese Ore	4-4.5		

majority of these minerals, scrap is indeed a major source of supply — 40-45 percent of U.S. iron, copper, and lead metal requirements come from secondary sources. While the proportion of demand met from such sources could be increased, a case-by-case examination of the prospects for this, particularly the economic incentives, does not yet indicate that scrap ratios are likely to change sufficiently to inhibit the growth of demand for virgin materials significantly in the foreseeable future. Yet the assumption of no major changes in recycling may turn out to be wrong since interest in recycling can be fueled by environmental considerations to which public opinion may become increasingly sensitive, and by new technical developments.

The above forecasts also assume no major change in rates of substitution — this on the basis of a case-by-case examination and giving special weight also to economic considerations. This assumption, too, while justifiable at present, may also prove to be fallacious, since trends in substitution are determined, among other factors, by unpredictable technological innovations in product development and processing. The development of non-silver photographic processes or of alternatives to lead in increasing the octane of gasolines, for example, may alter the demand and price outlook for these two metals significantly.

Except to the extent that one metal is simply replaced by another, unforeseen developments in both recycling and substitution would tend, of course, to slow the growth of demand for new resources. In the longer run, moreover, a third and much more powerful force may be operating to reduce the growth rate in demand for minerals. This force is the dynamics of economic growth itself, and especially the trends within the present group of developed countries. Historical experience shows, and cross-section studies confirm, that as an economy grows and

matures its requirements for most raw materials per unit of GNP (their "intensity of use") tends to decline. Nowhere is the evidence clearer and more convincing than in the case of steel, the demand for which influences the trends of a number of minerals. A recent study by the International Iron and Steel Institute (IISI) found that significant growth in "steel intensity" did not occur until income reached \$300 per head in 1963 prices, the minimum level required before an economic takeoff can be expected. Thereafter, as rapid industrialization sets in, steel consumption is propelled upward faster than GNP; eventually, however, at an income level of around \$2,500, steel intensity begins to decline, as the industry sector is extended into sophisticated spheres and the service sector expands in relative importance. Taking into account the relative size of those national markets now at the \$2,500 level or above, and of those which will enter or remain at the \$300-\$2,500 levels, one arrives at projected growth rates in demand for non-fuel minerals over the next 30 years that tend to be considerably lower than those just projected for the next ten years.

What then of availability and price? In terms of processing capacity, the meeting of the projected increases in demand does not appear to present serious problems or to require extraordinary investment; in the case of iron ore, nickel, and possibly one or two other minerals, existing capacity or capacity under construction is probably already sufficient for estimated 1980 requirements.

The reserve picture is more diverse. For phosphate rock, iron ore, bauxite, nickel, and manganese ore, world reserves are ample. (Estimated proven iron ore reserves increased sevenfold in the last 25 years and are deemed sufficient to last for at least 250 years at current levels of consumption and for at least 100 years at exponentially growing demand; potential ore reserves are triple the size of proven reserves and well distributed geographically.) Copper, lead and zinc fall into an intermediate category, with proven reserves now sufficient to last for only 30 years in the case of copper, and somewhat less for the other two. However, it should be noted that copper is currently being mined at progressively lower ore content and yet at costs rising only moderately in real terms, as a result of new extractive technology. (Because of increasingly strict pollution control standards, smelting costs, in contrast, have recently increased substantially.) Among significant minerals, the only ones whose reserves are tight or critical are silver and tin. Intensified explorations have failed to uncover significant new resources. There are, however, enormous hoards of silver in private hands which can be brought into the market by higher prices. In the case of tin, demand growth has already been forced down to about one percent per annum through substitution.

Finally, as one looks to the longer term, the mineral potential of the oceans becomes relevant. It is now clear that it is enormous, specifically for the nickel, copper, manganese and cobalt contained in the

so-called manganese nodules scattered over vast areas of the ocean floor. And the technology of seabed mining appears to be rapidly approaching the point of feasibility at bearable cost. [See Development Digest, April 1973, pp. 12-18.] The politics of developing the mineral resources of the seabed are complicated and so far unresolved, but there seems little doubt that a major contribution will come from this source well within the presently calculated life of the reserves of such minerals as copper.

This brings us to prices. For major minerals, these have been unusually high in 1973. The main factors responsible for this phenomenon have been (a) currency adjustments in early 1973 (which increased U.S. dollar prices), including the uncertainty that preceded the adjustments; (b) the coincidence of sharp upturns in industrial activities in all major developed countries; (c) serious supply problems in several major minerals arising from pollution control problems in non-ferrous metal smelting. Each of these was temporary, which would suggest that the price rises are by and large of a short-run nature. On the other hand, the dramatic recent increase in oil prices, and resultant energy costs, may raise substantially the cost and price of some processed minerals — and in cases such as bauxite affect the return of countries which handle primary processing.

Nonetheless, if one looks at the prices of the raw minerals themselves, economic forces now suggest that these will be lower in real terms in the next few years than they have been in 1973. If one takes 1967-69 as a base period, then it can be estimated that only silver, zinc, and phosphate rock prices will rise faster than the rate of inflation assumed in this exercise — that the "index of the wholesale prices of internationally traded goods" will rise by 5.25 percent per year between 1967-69 and 1980. Since mineral prices are notoriously cyclical and unsynchronized (due mostly to supply factors, such as investment cycles, labor strikes, and calamities), such a forecast does not attempt to describe the short-run movements of prices but only to suggest the general level of prices by the end of the period. Under this forecast, prices of bauxite, nickel and lead would hold their values in terms of 1967-69 constant dollars, while prices of copper and iron ore may decline slightly, and those of manganese ore and tin significantly.

Silver prices will register the sharpest gain in real terms, nearly 50 percent, between the late sixties and 1980, reflecting the chronic shortage of "new silver" and in order to bring out sufficient supplies from hoarded stocks to meet industrial demand. Zinc prices will follow with an increase of roughly 30 percent over the same period as a consequence of a shortage of smelting capacity (rather than ore) attributable to the problem of pollution control. In the case of the two commodities at the other end of the list, manganese and tin, real prices could decline from the 1967-69 base by about 30 percent and 20 percent respectively, reflecting sluggish demand (for tin), actual or potential

overcapacity, and already-approved releases from the U. S. stockpile. The new stockpile objectives call for release of seven million tons of manganese ore, equivalent to total developing countries' output in 1971, and a significant amount of tin. Accelerated disposal of U. S. non-commercial zinc stocks, too, despite their more modest volume (equivalent to two and one-half months' world consumption) may have an impact on the market, but in this case perhaps a healthy impact, by holding prices in line with prices of substitute materials, especially aluminum and plastics.

On the basis of our projections of demand/supply balances and the price trends outlined above — without taking into account possibly higher rates of inflation and the negative impact of higher energy costs — the conclusion is that developing countries' exports of these nine major minerals are likely to increase from \$4.8 billion in 1967-69 to \$15.2 billion in 1980 in nominal (or current) terms, rising by ten percent annually — or to \$8.2 billion in constant dollar terms, rising at a rate of 4.6 percent per annum, as shown below.

Table 2. Estimated Value of Developing Countries' Exports
(millions of dollars)

	Average 1967-69	1980 Value in current dollars	1980 Value in 1967-69 dollars
Copper	\$2, 281	\$8, 000	\$4, 315
Iron ore	811	2, 460	1, 325
Tin	565	930	500
Bauxite/alumina/ aluminum	450	1, 475	800
Phosphate rock	220	800	430
Zinc	130	600	325
Silver	132	525	285
Lead	113	215	115
Manganese	98	195	105
Total	<u>\$4, 800</u>	<u>\$15, 200</u>	<u>\$8, 200</u>

The picture that emerges from the trends spelled out above can be considered neither especially bullish for the developing countries nor threatening for the industrial countries. For the latter, the increased burden on the balance of payments of paying for non-fuel minerals will not be insignificant; moreover, since the United States in particular is dependent on external sources for steadily larger proportions of its mineral needs, the projected burden could rise more steeply after 1980.

While the forecast suggests that mineral prices will do generally better in the 1970s than in the past, this will serve only — for most minerals — to arrest the downward trends experienced in the 1960s. Moreover, real prices for some will continue to decline; it should be noted that for the last five to six years, the inflation adjustments obtained by many mineral-producing countries under existing contracts or through bilateral negotiation has been on the order of 2.5 percent per year — far short of the 6.2 percent yearly increase actually registered over the period in the index of wholesale prices of internationally traded goods.

To repeat, the above analysis warns against the lumping of petroleum statistics and non-fuel mineral statistics — predictions that the import bill of consuming countries for "raw materials" might be X billion dollars by 1980, which are not explicit about the high ratio (currently at least 8:1) between projected oil import costs and the total costs of non-fuel minerals, are grossly misleading. In addition to distorting the import picture, the lumping of statistics overlooks the fact that while roughly half of the oil revenues will accrue to five resource-surplus countries (namely, Saudi Arabia, Qatar, Abu Dhabi, Kuwait, and Libya), the projected revenue from non-fuel minerals will go to as many as 40 developing countries, nearly all of which are in great need of capital and most of which face increased oil import costs themselves.

Future OPECs?

The projections presented above have been based on market forces as they currently exist, without the operation of special new pressures by the producing countries in particular. It remains to consider whether, in the light of the remarkable success achieved by the OPEC grouping since 1971 in altering the terms of trade for oil (and recently in withholding supplies), any similar success could be achieved by producers' alliances among developing countries rich in other minerals.

Obviously, the political urge to form such alliances is there. A sense of disappointment at their overall treatment by the industrial countries is almost universal among developing countries. For the producers of minerals, there is moreover the keen sense that their minerals are non-renewable, an asset that should produce the greatest possible return and if possible have its useful life stretched out. Hence, it is only natural that producers should seek to change a situation in which, by and large, the sellers of non-fuel minerals are competing, diffuse, and unorganized in the face of relatively few and well-organized buyers on behalf of the consuming countries.

The four principal producers of copper (Zaire, Zambia, Peru, and Chile) have long worked together in CIPEC (Conseil Intergouvernemental des Pays Exportateurs de Cuivre — the Intergovernmental Council of Copper Exporting Countries), and currently there are widespread reports of intense consultation among the producers of other key

minerals. The very least that can come out of the current energy crisis is that the producers of all minerals (and of key agricultural commodities as well) will be far more alert to the market situation and far more aggressive in seeking to alter it to their advantage.

But when it comes to assessing their chances of major success, the present prediction must be very cautious. Even the strongest political urge, or the most adroit management, cannot alter certain basic factors that, in our judgment, severely limit the possible accomplishments of producers' alliances in non-fuel minerals. The key economic fact is that, while demand for most non-fuel minerals is price-inelastic in the short run (i. e. , not reduced in proportion to price increase), this is not necessarily true over the long run. Calculations based on historic experience for tin, aluminum and copper, for example, suggest strongly that in the long run the drop in demand more than offsets any price increase, so that the total return to the producers eventually becomes less than before the price change.

The reasons for the long-term price elasticity are threefold — stockpiles, recycling possibilities, and the use of substitutes — none of which, of course, apply to oil in anything like the same way as yet. The availability of stockpiles tends to mitigate the immediate impact of supply curtailment — although in times of anticipated protracted scarcity these might not be released freely enough to improve effectively the short-term situation. Stockpiles, especially those of the United States, have long affected the price of tin, and to a lesser degree manganese and zinc. If these are maintained, the cushioning effect should continue. On the other hand, if the United States were now to dispose rapidly of its stockpiles, their hangover effect on the market would disappear, and after a period of depressed prices the result might be some tendency for prices to increase in the longer term.

The point, however, is that it is not necessary for all three factors to be at work at the same time. Any one of the three tends to place a ceiling on prices that would be much lower relative to current price levels than has been the case for the recent price rises of petroleum. Thus, whereas oil is completely dissipated when consumed, recyclable metal scrap is generated continually in the major consuming countries, adding to the already vast reserves of so-called secondary sources. While recovery from some of these sources would take time, accelerated recycling is possible for a wide range of materials, including aluminum, copper and lead. The real determinants of the pace of recycling are economic, basically whether prices are such that consuming industries find it advantageous to use the scrap reserve. Environmental considerations may enter in, but recent events suggest that they too may be modified in response to changed economic circumstances. As for the potential impact of the "energy crisis" on recycling, it appears to vary sharply from case to case; for aluminum, where new production is highly energy-intensive, the incentive to

use scrap may increase because of the energy input already embodied in it; for steel, on the other hand, the use of scrap requires more energy to process than does "hot metal" (molten pig iron). All in all, price remains the main factor affecting the amount of recycling.

The possibility of substitutes represents a real threat at any time to the effective maintenance of substantially higher prices. Such substitutes can replace the basic mineral as a source for the metal, the metal itself, or the metal-containing product altogether. (For example, bauxite can be replaced by other materials in making aluminum, aluminum can be replaced by tin in making cans, and cans can be replaced by plastic or glass containers.) Current or potential substitutes are available for the majority of minerals, among them nearly all of the non-ferrous metals.

While these assessments can be countered by arguments that some of the substitutes may be in short supply or high-priced (like plastics at this time due to the oil crunch), or that their supply too may be controllable by producers' alliances, it should be borne in mind that the field of metallurgy has historically been in the vanguard of experimentation and development of substitutes in the direction of the cheapest and most abundant raw materials. In short, the infrastructure for weathering a crisis at manageable cost within tolerable time is more sophisticated in this sector than in the energy sector. As recent events have shown, oil was grossly underpriced vis à vis substitutes; whereas in the case of almost all non-fuel minerals, the price increase at which either substitution or exploitation of lower-grade sources becomes feasible is a great deal less than it is for oil, and the process involves substantially shorter time lags.

Another consideration as to the feasibility of powerful producers' alliances in non-fuel minerals is the size and distribution of global resources and the degree to which these can be controlled by certain configurations of countries. Resource scarcity itself is not essential for the establishment of a successful cartel; what is required is control over present and potential supply. But the scarcity factor is important in the sense that it strengthens the hand of producing countries in imposing their terms and shaping the ultimate course of supplies, or costs. For it is crucial to the successful operation of a cartel that supply outside the membership be inelastic, i. e., that other suppliers are higher-cost producers with relatively small reserves. There are few minerals that are in fact, or are perceived to be, as potentially scarce as petroleum; and with the possible exception of copper, none is truly indispensable.

Furthermore, the distribution of world reserves cuts across categories of economic or political interest. Developing countries are estimated to have roughly 40-45 percent of the world's major non-fuel mineral reserves, with 35 percent in developed countries and 25-30 percent in

developed countries and 25-30 percent in centrally planned countries. Developed countries which produce and sell major non-fuel minerals in competition with developing countries include Canada, Australia, and South Africa. Consequently, in a number of minerals (copper, among others) a cartel confined to developing countries would be ineffective, since supply elasticity outside the cartel would be substantial at least in the medium term (three to four years). In such situations, then, the feasibility of a cartel would depend heavily on whether individual developed countries — facing complex factors including their own broad interdependence with developed consumer countries — would participate fully in the producers' alliance.

Theoretically, the number of countries involved in a cartel effort need not be small, since the operative variable is "community of interest." But in practice, limited membership helps. The relationship between the amount of control by a cartel and the degree of its success cannot be stated in terms of a general formula. What is clear in the light of the wide geographic distribution of many of the minerals in question is that potential producers' alliances will have to include a wide range of heterogeneous interests among their membership. Lastly, since deposits vary in grade and in the economics of exploitation and processing, price increases would continuously recast the configuration of the membership necessary to bring control to bear. Iron ore provides perhaps the best illustration of this last point, with resources distributed over four continents and among varied economic groupings. It also brings home the difficulty of neatly categorizing the producers and consumers of non-fuel minerals as groups with identifiably contrasting interests.

In addition to the above general considerations, one must return to the specific projections of the future market for individual minerals. For most non-fuel minerals the demand outlook, as noted already, is not markedly different from past experience. If decelerated economic growth is now the general result of the high cost of energy, then the predictions earlier in this article would become even less buoyant.

Finally, there is what might be called the naked bargaining position of individual producing countries at a given time. In relation to their levels of development and dependence on exports of their mineral resources for achieving developmental goals — not to mention the actual financial reserves required to play a tough bargaining game — no group of potential cartel members for a non-fuel mineral seems likely to attain as strong a position as the OPEC countries have held since 1970. The latter were dealing from a unique position of strength in that they had no major conflicting trade interests, either domestic or within the group, enjoyed a high degree of independence from developed countries, and came to hold large financial reserves. In contrast, a producers' group for any given non-fuel mineral would be likely to include one or more large countries with basic agricultural needs or

heavily dependent on the continued expansion of its export markets for manufactured goods. Moreover, whereas the OPEC states had completed the development of their oil resource base at the time of their concerted action, many developing countries that produce non-fuel minerals remain dependent on foreign capital and technology to develop, expand, transport and increase the processing of their resources.

Conceivably, some of the OPEC countries could come to the aid of a cartel in non-fuel minerals to the extent of supplying the financial resources for this kind of resource development, or to make up possible temporary shortfalls in revenues, even the "revenue foregone" by curtailment or non-development of a resource. But only the developed countries now command the technology, the wider development resources, and the markets on which many producers depend.

In sum, there are strong factors which seem to mitigate the feasibility of proliferating producers' alliances modeled on OPEC. Nonetheless, the possibilities for such alliances do exist in a few minerals. Foremost among these is bauxite, where the alliance-inducing factors seem to outweigh the obstacles, as illustrated by the preliminary consultations among Jamaica, Surinam, Guinea and other bauxite-producing countries. Moreover, in one case, Morocco, a major supplier of phosphate rock to the West European market, unilaterally raised its prices by a factor of three last fall; although the full extent of this recent price increase may not be maintained in the long run since there are large unexploited resources of the product, prices are certain to lie on a new plateau hereafter. There is an improved climate for group pressure or price leadership, and where the trend is toward higher mineral prices — often to pay the larger oil bills of the producing countries themselves — the new aggressive stance of producers would seem to make it irreversible.

Whether concerted pressure for higher commodity prices will be accompanied by true cartel forms of action and by attempts at supply constraints is still another question. As the above discussion makes clear, the obstacles to this kind of stronger action are especially great for the non-fuel minerals considered. Yet in a basic situation where developing countries urgently need resources for development, the chances of their resorting to such drastic measures could depend, in the last analysis, on the overall state of relations between rich and poor countries.

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Food: Growing Global Insecurity

Lester R. Brown and Erik P. Eckholm

[The international scarcity of major agricultural commodities , evident in 1973, reflects important long term trends as well as the more temporary phenomenon of lack of rainfall in the Soviet Union and parts of Asia and Africa. Global grain reserves, which provide a crucial measure of safety when crop failures occur, are likely to remain on the low side for some time, and little if any excess cropland will be held idle in the United States. Food prices will probably remain considerably higher than they were during the last decade. Meanwhile, the world has become overwhelmingly dependent on North America for exportable food supplies. Suggestions are made for building up global food reserves and reducing world vulnerability to crop failures.]

During the 1960s, the world food problem was perceived as a food/population problem centered on the developing countries — a race between food and people. At the end of each year, observers anxiously compared rates of increase in food production with those of population growth to see if any progress was being made. Throughout most of the decade, the race was close. In the 1970s, rapid global population growth continues to generate demand for more food; in addition, rising affluence is emerging as a major new claimant on the world's food resources. Thus there are two important sources of growth in world demand for food.

Worldwide, population growth is still the dominant source of expanding demand for food. If world population were to continue to expand at nearly 2 percent annually, merely maintaining current per capita consumption levels would require a doubling of food production in little more than a generation. But the major source of demand differs between the poor and the rich countries. Throughout the

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poor countries —where, at best, only very limited progress is being made in raising per capita consumption — population growth accounts for most of the year-to-year growth in the demand for food. In the more affluent countries, however, rising incomes account for most of the increase in the demand for food.

The effect of rising affluence on the world demand for food is perhaps best understood by examining its effect on cereal requirements, which dominate the world food economy. In the poor countries, the annual availability of grain per person averages only about 400 pounds per year or roughly a pound a day. Nearly all of this small amount must be consumed directly to meet minimum energy needs. In the United States and Canada, per capita grain utilization is currently approaching one ton per year. Of this total, only about 150 pounds are consumed directly in the form of bread, pastries, and breakfast cereals. The remainder is consumed indirectly in the form of meat, milk, and eggs. The agricultural resources — land, water, fertilizer — required to support an average North American are nearly five times those required for the average Indian, Nigerian, or Colombian. In the northern tier of industrial countries stretching from the United Kingdom and Europe through the Soviet Union to Japan, dietary habits more or less approximate those of the United States in 1940. As incomes continue to rise in this group of countries, a sizable share of the additional income is being converted into demand for livestock products, particularly beef. Many of these countries lack the capacity to satisfy the growth in their demand for livestock products entirely from indigenous resources. As a result, they are importing increasing amounts of livestock products or of feedgrains and soybeans with which to expand their livestock production.

Four Critical Resources: Land, Water, Energy, and Fertilizer

As the world demand for food climbs, constraints on efforts to further expand food production become increasingly apparent. The primary means available for expanding supplies fall into two categories: either increasing the amount of land under cultivation, or raising yields on existing cropland through intensified use of water, fertilizers, and energy. We face problems in the needed expansion of each of these physical resources.

The traditional approach to increasing production — expanding the area under cultivation — has only limited potential for the future. Some parts of the world actually face a net reduction in agricultural land because of the growth in competing uses, such as industrial development, recreation, transportation, and residential development. Few countries have well defined land use policies that protect agricultural land from other uses. Some densely populated countries, for example Japan and several Western European countries, have used decreasing amounts of land for crop production in the past few decades. Other parts of the world, including particularly the Indian subcontinent, the Middle East, North and sub-Saharan

Africa, the Caribbean, Central America, and the Andean countries, are losing disturbingly large acreages of cropland each year because of severe erosion.

The availability of water for agricultural purposes will be particularly critical for food production in the future. Fertile agricultural land would be available in many regions of the world if water could be found to make it productive. But most of the rivers that lend themselves to damming and to irrigation already have been developed. The expansion of irrigated area is likely to slow down as we run out of easy opportunities to continue expanding. Future efforts to expand fresh water supplies for agricultural purposes will focus increasingly on such techniques as tubewell irrigation, the diversion of rivers (as in the Soviet Union today), desalting sea water, and the manipulation of rainfall patterns to increase the share of rain falling over moisture-deficient agricultural areas.

In many developing countries, intensification of agricultural production on the existing cultivated area will require a several-fold increase in energy supplies. With world energy prices increasing rapidly, the costs of intensifying food production will rise commensurately. In countries that are already engaged in an agriculture requiring large energy inputs such as the United States, high energy prices and the possibility of fuel rationing may hold down future production.

In addition to arable land, fresh water, and energy, fertilizer is also in short supply, and the outlook in this case, too, is higher prices. One reason for the fertilizer shortage is a lag in the construction of new production facilities, but the rising cost of energy will also drive up fertilizer prices. The manufacture of nitrogen fertilizer -- the most widely used chemical fertilizer -- commonly requires natural gas or naphtha as a raw material, and the process of manufacturing fertilizer involves the use of large amounts of energy. Moreover, fertilizer demand over the remaining years of this century will soar to phenomenal levels. World prices of chemical fertilizers, particularly nitrogenous fertilizers (which constitute more than half of all chemical fertilizers used in the developing world), have risen rapidly in the last year. Fertilizer price rises alone will increase the fertilizer import bill of the developing nations by several hundred million dollars in 1974.

More ominous than price increases, however, are the fertilizer shortages which appeared in late 1973. By early 1974, there were signs that many nations -- including populous ones such as India, Indonesia, Pakistan, and the Philippines -- would be unable to obtain the needed amounts of fertilizers regardless of price. Japan, a principal supplier of nitrogenous fertilizers in Asia, was forced to cut production and exports substantially as a result of its energy crisis. Although it is impossible to estimate the full impact of this development at the beginning of 1974, it appears certain that reduced fertilizer

supplies during the year will cause a drop in food production in several key developing countries even if weather conditions are good. The unfortunate result will be increased food import needs at a time when global reserves are already at dangerously low levels and food prices are at historic highs.

In the face of these restraints on the expansion of production, one of the key questions concerning future gains in agricultural production is whether the more advanced countries can sustain further increases in cereal yields per acre. In some of these countries, increases in yields per acre are beginning to slow down, and the capital investments required for each additional increase may now start to climb sharply. In agriculturally advanced countries, as in Japan and parts of Europe, the cost per increment of yield per acre for some crops already is rising. For example, increasing rice yields in Japan from the current 5,000 pounds to 6,000 pounds per acre would be very costly. Raising yields of corn in the United States from 90 to 100 bushels per acre requires a much larger quantity of nitrogen than was needed to raise yields from 50 to 60 bushels. Higher fertilizer prices will further reduce the potential for continuing yield increases.

Ecological Undermining of the World Food Economy

In many parts of the world, the growing demand for food is putting more pressure on the food-producing ecosystem than it can withstand. One dramatic example is the experience of the anchovy fishery off the western coast of Latin America. During the early seventies, this vast fishery accounted for one-fifth of the global fish catch. But during 1972 and throughout much of 1973, the anchovies seemingly disappeared from the traditional offshore fishing areas. At first this did not cause a great deal of alarm, since a slight shift in the Humboldt current and the change in temperature of a few degrees had caused the anchovies to move away before, at least temporarily. There is now growing evidence, however, that the very heavy annual catches, ranging from 10 million to 12 million tons in the late sixties and early seventies, may have exceeded the capacity of the fishery to regenerate itself. Overfishing may have seriously damaged the anchovy fishery. As the anchovies finally began reappearing in 1974, marine biologists were hopeful that fishing efforts in the region would be more carefully regulated in the future, permitting catches at a sustainable level.

A second example of ecological overstress that is diminishing the earth's food producing capacity is now evident in the Sahel in Africa. During much of 1973, the news media reported the situation in the Sahel as being the product of a sequence of drought years. The problem was described in terms of the need for a temporary food relief effort. It was estimated that perhaps 600 thousand tons of grain would be required in a half dozen seriously affected countries over the next several months. The

need was real indeed, but the problem in the Sahel is more basic and long term. Over the past thirty-five years, human and livestock populations along the sub-Saharan fringe have increased rapidly — in some areas nearly doubling during this period. As the human and livestock populations multiply, they put more pressure on the ecosystem than it can withstand. The result is over-grazing, deforestation, and general denudation of the land. As a result, the Sahara desert is shifting southward at an accelerated rate along its 3,500-mile southern fringe, stretching from Senegal to northern Ethiopia. A U.S. government study indicates the desert is moving southward at rates up to 30 miles per year. As the desert expands southward, human and livestock populations retreat before it. The result is even greater pressure on the fringe area. This in turn contributes to further denudation and deforestation, setting in process a self-reinforcing cycle.

Coping with this situation requires far more than temporary famine relief. The world must recognize that a continuing food relief effort for this region will be required indefinitely. But relief only treats the symptoms of ecological overstress. There is also a need to attempt to arrest and reverse the southward movement of the desert. This will require an extensive infusion of economic resources and technical "know how" in desert reclamation and land management from outside the region. Among other things, a concerted cooperative effort should be undertaken by the tier of countries most immediately affected, the countries to the south which already are or shortly will be affected, and a large number of external donors who must supply many of the resources. But above all, the situation calls for the launching of efforts to slow and stabilize the region's population growth, which is a fundamental source of the ecological distress.

The Indian subcontinent presents a third dramatic example of ecological overstress. As human and livestock populations have increased the subcontinent has been progressively deforested, most noticeably in the past fifteen years. One does not need much training in soil and water management to be greatly alarmed by the probable long term consequences of this progressive and accelerating deforestation. The situation is most serious in the Himalayas and the surrounding foothills, for this is where nearly all the major river systems of the Indian subcontinent — the Indus, the Ganges, and the Brahmaputra — originate. The long term dangers inherent in progressive deforestation could have been predicted several years ago. Yet Pakistan's flood of last summer, the worst in its history, came as a surprise — washing away entire communities and destroying a large share of the recently harvested wheat crop in storage as well as a sizable share of the summer crop standing in the fields. Since the deforestation is continuing, one can only predict that the incidence and severity of flooding in Pakistan, India, and Bangladesh will be much greater in the future than it is at present. In effect, deforestation in the subcontinent — particularly in Nepal — may be undermining the food-producing capability of the subcontinent on which nearly three quarters of a billion people now depend.

Constraints on Protein Production

There is reason for particular concern about the difficulties of expanding the world protein supply to meet the projected rapid growth in demand that is now being fueled both by population growth and rising affluence. At present, mankind is faced with technological and other constraints on increasing the supply of three principal sources of protein.

Two major constraints limit the production of beef. Agricultural scientists have not been able to devise any commercially feasible means of breeding more than one calf per cow per year. For every animal that goes into beef production, one adult must be fed and maintained for a full year. The other constraint on beef production is that the grazing capacity of much of the world's pasture land is now almost fully utilized.

A second potentially serious constraint on efforts to expand supplies of high quality protein is the inability of scientists to achieve a breakthrough in yields per acre of soybeans. Soybeans are a major source of high quality protein for livestock and poultry in much of the world and are consumed directly as food by more than a billion people throughout densely populated East Asia. Soybeans have become the leading export product of the United States, which now produces two-thirds of the world's soybean crop and supplies about 90 percent of all soybeans entering the world market. U.S. soybean yields per acre have increased by only about 1 percent per year since 1950; corn yields, on the other hand, have increased by nearly 4 percent per year. One reason soybean yields have not climbed very rapidly is that the soybean, being a legume with a built-in nitrogen supply, is not very responsive to nitrogen fertilizer. Close to 85 percent of the dramatic four-fold increase in the U.S. soybean crop since 1950 has come from expanding the area devoted to it. This dependence on acreage expansion could create serious global supply shortages if the U.S. cropland reserve continues to diminish or disappears entirely.

A third major constraint on the future supply of high-protein foods is the fact that oceanic fisheries are no longer expanding rapidly. From 1950 to 1968, the world fish catch climbed to a new record each year, tripling during the period. In 1969, the global catch turned downward for the first time in nearly two decades. After a strong recovery in 1970, the catch has again declined for three consecutive years, clouding future prospects for oceanic fisheries. Many marine biologists now feel that the global catch of table-grade fish is at or near the maximum sustainable level. The catch of a large number of the thirty-odd leading commercial species of table-grade fish now exceeds the estimated sustainable catch.

Depleted Global Reserves

The period since World War II has been characterized by excess capacity in world agriculture, much of it concentrated in the United States. The world was fortunate to have, in effect, two major food reserves

during this period — one in the form of grain reserves in the principal exporting countries, and the other in the form of reserve cropland, virtually all of which was land idled under farm programs in the United States.

Grain reserves, including substantial quantities of both foodgrains and feedgrains, are most commonly measured in terms of carry-over stocks — the amount in storage at the time the new crop begins to come in. World carry-over stocks are concentrated in a few exporting countries, namely, the United States, Canada, Australia, and Argentina. Since 1960, world grain reserves have fluctuated from a high of 155 million metric tons to a low of about 100 million metric tons. When these reserves drop to 100 million tons, as in 1966-67 and 1973-74, severe shortages and strong upward price pressures develop. Although 100 million tons appears to be an enormous quantity of grain, it represents a mere 8 percent of annual world grain consumption, or less than one month's needs — an uncomfortably small working reserve and a perilously thin buffer against the vagaries of weather and plant diseases. Since world consumption expands by some 2.5 percent annually, so should the size of working reserves; but over the past two decades, reserves have dwindled while consumption has continued to climb.

The second major source of stability in the world food economy was the reserve of idle U.S. cropland. For the past dozen years or so, the government has paid to keep roughly 50 million acres out of production under farm programs. This source of supply cannot be tapped as quickly as the grain reserves, but most of this acreage can be brought back into production within 12 to 18 months once the decision to do so is made. In recent years, the need to draw down grain reserves and to utilize the reserve of cropland has occurred with increasing frequency. This first happened during the food crisis years of 1966 and 1967, when world grain reserves were reduced to a dangerously low level and the United States brought back into production a small portion of its 50 million idle acres. Government decisions in early 1973 permitted much of the idled cropland to come back into production, and in 1974 no government payments will be made for keeping cropland fallow.

Table 1. Index of World Food Security

Year	Reserve Stocks of Grain	Grain Equivalent of Idled U. S. Cropland		Total Reserves	Reverses as Share of Annual Grain Consumption	
		(millions metric tons)			(per cent)	(no. of days)
1961	154	68		222	26	95
1962	131	81		212	24	88
1963	125	70		195	21	77
1964	128	70		198	21	77
1965	113	71		184	19	69
1966	99	79		178	18	66
1967	100	51		151	15	55
1968	116	61		177	17	62
1969	136	73		209	19	69
1970	146	71		217	19	69
1971	120	41		161	14	51
1972	131	78		209	18	66
1973	103	20		123	10	37
1974 a	89	0		89	7	27

^aProjection.

SOURCE: Prepared on the basis of U. S. Department of Agriculture data.

From the end of World War II until quite recently, world prices for the principal temperate zone farm commodities such as wheat, feed-grains, and soybeans have been remarkably stable. In part, this is because throughout much of this period world prices have rested on the commodity support level in the United States. Since in the years ahead, world food reserves may become chronically low and the idled crop acreage in the United States may remain at a low level or even disappear entirely, the prospect is one of volatile world prices for the important food commodities.

The North American Breadbasket

Over the past generation, the United States has achieved a unique position as a supplier of food to the rest of the world. Before World War II, both Latin America (especially Argentina) and North America (the United States and Canada) were major exporters of grain. During the late thirties, net grain exports from Latin America were substantially above those of North America. Since then, however, the combination of the population explosion and the slowness of most Latin American agriculture to modernize has eliminated the region's net export surplus. With few exceptions, Latin American countries are now food importers.

Table 2 illustrates that over the past three decades, North America — particularly the United States, which accounts for three-fourths of the continent's grain exports — has emerged as the world's breadbasket. The exports of Australia, the only other net exporter of importance, are only a fraction of North America's. Moreover, the United States is now not only the world's major exporter of wheat and feedgrains but also the world's leading exporter of rice. Thus North America today contributes a larger share of the world's exportable surplus of grains than the Middle East does of current world oil exports.

Exportable supplies of the crucial soybean are even more concentrated than those of grains. As late as the 1930s, China supplied nearly all the soybeans entering world markets, but continuing population growth during the ensuing decades has gradually absorbed its exportable surplus. As of 1973, China is importing small quantities from the United States. The position of principal supplier has been taken over by the United States, which provided over 90 percent of the world soybean exports in the sixties and early seventies. With world demand for high quality protein surging upward, Brazil — virtually the only other nation capable of exporting soybeans on a sizable scale in the foreseeable future — has rapidly boosted its soybean production and exports. For many years to come, however, the United States is likely to continue supplying three-fourths or more of the world's soybean exports.

At the same time that dependence of the rest of the world on North American food exports is increasing so dramatically, there is also a

growing awareness that this extreme dependence leaves the world in a very dangerous position in the event of adverse crop years in North America. Both the United States and Canada are affected by the same climatic cycles. Considerable evidence has now been accumulated indicating that North America has been subject to clusters of drought years that recur roughly every twenty years. The most recent drought in the early fifties, was comparatively mild, but the preceding one, in the early thirties, was so severe that the period was known as the "dust bowl" era in the United States. If the United States were to experience another stretch of drought years, the impact on production would not be as great as in the 1930s due to improved conservation practices. However, the rapid growth of global demand and the extreme world dependence on North America's exportable margin of food would make any decline in production a very dangerous situation, and would trigger intense competition for available food supplies.

Table 2. THE CHANGING PATTERN OF WORLD GRAIN TRADE^a

<u>Region</u>	<u>1934-38</u>	<u>1948-52</u>	<u>1960</u>	<u>1966</u>	<u>1973</u> ^b
	(millions metric tons)				
North America	+5	+23	+39	+59	+88
Latin America	+9	+1	0	+5	-4
Western Europe	-24	-22	-25	-27	-21
Eastern Europe and U. S. S. R.	+5	—	0	-4	-27
Africa	+1	0	-2	-7	-4
Asia	+2	-6	-17	-34	-39
Australia and New Zealand	+3	+3	+6	+8	+7

^aPlus sign describes net exports; minus sign denotes net imports.

^bEstimate.

SOURCE: Based on Food and Agriculture Organization and U. S. Department of Agriculture data.

It is in the context of growing world dependence on the United States for protein and grains that we must view the abrupt unilateral imposition of export restrictions on soybeans and feedstuffs by the United States in June 1973. The export controls represented an effort to fight food price inflation within the United States but had the inevitable result

of greatly intensifying inflationary pressures and food shortages in other nations. Thailand, Brazil, Argentina, and other food exporting nations also imposed food export controls in 1973.

Since food scarcity is very likely to be a frequent problem in the years ahead, as our preceding analysis indicates, careful consideration should be given to the establishment of international standards to govern the conditions under which important food suppliers are permitted to withhold supplies, and to provide some assurance of access to needed food supplies for importing nations. Either the revision of present arrangements under the GATT, or the creation of new international rules in another forum, could define the circumstances in which principal suppliers would be justified in restricting exports, and provide for automatic international consultation and action when international food shortages were developing. The establishment of such international guidelines for food — an area where the U.S. predominates — would set a precedent of great potential value in connection with non-food resources, where similar questions of access to supplies are emerging.

Steps Towards a Rational Food Policy

A global reserve system. The global food outlook calls for serious consideration of the creation of an internationally managed food reserve system. U.S. agriculture may no longer have sufficient excess capacity to ensure reasonable stability in the world food economy over a multiyear period. World food reserves can be built up out of surplus production in times of relative abundance and drawn down in times of acute scarcity. This would help to hold down price increases for consumers during times of scarcity and to hold up prices for producers during the inevitable periods of production in excess of immediate world demand. In effect, the cushion and stability that surplus American agricultural capacity have provided for a generation would be provided at least partially by a world food reserve system. Clearly the world community also has a basic humanitarian interest in ensuring that famine does not occur in the densely populated low-income countries following poor crop years — an assurance the affluent nations may be less able to provide in the future if the current system of autonomous, nationally oriented food planning continues without modification.

In 1973, A. H. Boerma, the Director-General of the UN Food and Agriculture Organization (FAO), proposed a new system of internationally coordinated national food reserve policies. Under the FAO plan, all nations — both exporters and importers — would hold agreed minimum levels of food stocks. Governments would consult regularly to review the food situation, evaluate the adequacy of existing stocks, and recommend necessary actions. The FAO plan received preliminary international approval at the FAO conference in November 1973. In many ways the plan is a particularly attractive one from the American point of view. In the past, the United States has provided the world with safe reserve levels largely as a side benefit of its domestic farm income program. In the seller's market for foodstuffs which emerged in 1973, these reserves — both large grain stocks

and idled cropland —were reduced substantially. Under such conditions, it would be highly unrealistic to expect the United States alone to bear the considerable expense of building grain reserves large enough to ensure world security. The FAO plan has the built-in advantage of spreading responsibility for reserve maintenance among both the exporting and importing nations of the world.

Under the FAO proposal or any other world food reserve plan, special measures will be necessary to assist poor nations in establishing storage facilities and building up needed reserves. A new source of concessional assistance, perhaps in the form of an earmarked expansion of the World Bank's soft-loan program or of a special fund with the FAO, will be necessary. Prudence suggests that every effort be made to keep total world grain reserves of, at a minimum, 15 percent of annual consumption. Historically, strong upward price pressures have developed when reserves have fallen below that level. At the present time, this would imply a need for about 180 million metric tons of grain held in reserves.

A global agricultural research strategy. In the 1960s, the major gains in food production resulting from the development and spread of new high-yielding wheat and rice varieties — the "green revolution" — demonstrated the important role that agricultural research can play in augmenting global food supplies. Current research efforts in a number of areas are vitally important and deserve strong support from governments and private donors. Higher yielding, drought-resistant varieties of such dryland crops as sorghum and millet, for example, are desperately needed in many areas that are too dry to take advantage of the new wheats and rices. Higher yielding varieties of protein-rich pulses (such as beans, peas, and soybeans) must be developed if the current tendency of many developing nations to reduce pulse acreage in favor of relatively high-yielding but low-protein grain is to be reversed. Little is known about the potential of agriculture in the tropical regions, where research breakthroughs might open up new areas to food production. The possibilities of higher productive multiple cropping remain unknown in many regions for want of effective research efforts. New methods to achieve a further expansion of grain yields in the more advanced nations also must be devised.

A very encouraging recent development with special benefit for the developing nations was the formation in 1971 of the Consultative Group on International Agricultural Research. Headquartered at the World Bank in Washington, the Consultative Group is actively supported by the U. S. Agency for International Development, the Ford and Rockefeller foundations, the World Bank, and several other governments, foundations, and international organizations. The Consultative Group is examining developing country research needs on a systematic global basis and channeling financial support to priority areas. It is coordinating the research efforts and funding of six key research centers in different geographic regions and varied climates: the International Wheat and Maize Improvement Center (CIMMYT) in Mexico; the International Rice

Research Institute (IRRI) in the Philippines; the International Center for Tropical Agriculture (CIAT) in Colombia; the International Potato Center (CIP) in Peru; the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India; and the International Institute of Tropical Agriculture (IITA) in Nigeria. The various donors allocated over \$24 million to these centers in 1973. The Consultative Group represents an historic step in the evolution of a truly global agricultural research strategy. It is helping to rectify a serious deficiency of the past: the over-concentration of research efforts on the problems of temperate zone agriculture in the developed nations.

There is a strong feeling among research scientists working in this field that the existing centers and the Consultative Group can handle the research to be done, and that few, if any, additional centers need to be created. The already established institutes focus on the major crops: rice, wheat, corn, sorghum, beans, and livestock. It is now time to focus attention on the systems within the individual developing countries for providing the services and inputs farmers need to utilize the new technologies.

With global demand for high-quality protein rising rapidly, an especially strong need has emerged for a breakthrough in soybean yields per acre. With substantial excess cropland no longer available in the world's two major soybean producing countries, this inability to raise yields appears as an ominous cloud overhanging the world food economy. The creation of a joint Sino-American soybean research institute has great potential value and might well be explored. China, where the soybean originated, probably has the most diverse available collection of germ plasm. The United States, on the other hand, has already invested a great deal of scientific effort in devising better cultural practices and making the soybean plant more productive. The critical importance of the soybean to both economies, and to mankind as a whole, and the pressing need to achieve a scientific breakthrough in yields of soybeans, argue for a pooling of germ plasm, the coordination of research efforts, and the sharing of research results.

International management of oceanic fisheries. A close examination of the extent of overfishing in many of the world's fisheries underlines the urgency of evolving a cooperative global approach to the management of oceanic fisheries at the 1974 Law of the Sea Conference. Failure to do this may result in continuing depletion of stocks, declining catches, and rises in seafood prices that will make those of the early 1970s seem modest by comparison. This in turn would put additional pressures on land-based food resources, driving up international prices of both high-protein products and grains.

Need to modify diets among the affluent. A variety of economic and moral forces may compel those in countries like the United States to reduce the demands they place on world food resources. This can most readily be accomplished through the substitution of vegetable-based protein for animal protein. Such a shift has already occurred in the substitution of vegetable oils for animal fats; in 1940 the average American was

consuming 17 pounds of butter and 2 pounds of margarine, but by 1971 consumption averaged only 5 pounds of butter and 11 pounds of margarine. Lard almost has been pushed off supermarket shelves by vegetable shortenings, and a dominant share of the whipped toppings and coffee "whiteners" marketed in the United States are now of non-dairy origin.

Technology for the substitution of vegetable for animal proteins also has made considerable progress, mainly with soybean-based meat substitutes. Food technologists can now compress soya fibers into meat form and, with appropriate flavoring and coloring, come up with nutritious substitutes for beef, pork, and poultry. Soya protein "extenders," augmenting meat proteins in ground meats, already are used widely in institutions throughout the United States, and they began to appear in supermarkets for general use in 1973. There are now good economic, ecological, and health reasons for reducing the average consumption of animal products in the developed countries.

Expanding production in the poor countries. While one of the most immediate means of expanding the food supply is to return the idled U. S. cropland to production, over the longer run the greatest opportunities lie in the developing countries where the world's greatest reservoir of unexploited food production potential is located. In those countries having the appropriate economic incentives, fertilizer, water, and other required agricultural inputs and supporting institutions, the introduction of new wheat and rice varieties has increased production substantially. But today rice yields per acre in India and Nigeria still average only one-third those of Japan; corn yields in Thailand and Brazil are less than one-third those of the United States. Large increases in food supply are possible in these countries — at far less cost than in agriculturally advanced nations — if farmers are given the necessary economic incentives and have access to the requisite inputs. If India were able to raise its grain yields to equal those of the United States, its current annual cereal production would be 230 million metric tons rather than the present total of approximately 100 million tons. If rice farmers in Bangladesh attained Japanese yield levels, rice production would jump fourfold, from 10 to 40 million tons. By doubling its present cultivated area, Brazil could produce an additional 22 million tons of grain even if its currently low yield levels were not improved.

Now that global food scarcity exists and the capacity of the international community to respond to food emergencies has diminished, a more convincing case than ever exists for strengthened support of agricultural development in such populous, food-short countries as Bangladesh, India, Indonesia, and Nigeria. An almost equally convincing case can be made that in doing so, particular attention should be placed on effectively involving small farmers in the production effort. There is considerable evidence that small farmers, when they have effective access to agricultural inputs as well as health and education services, engage in labor-intensive agriculture and generally average considerably higher yields per acre than do large farmers.

The concentration of efforts to expand food production in the poor countries could reduce upward pressure on world food prices, create additional employment in countries where continuously rising unemployment poses a serious threat to political stability, raise income, improve nutrition for the poorest portion of humanity, and could also prove to be an important factor in bringing about a significant reduction in birth rates.

Slowing population growth. The prospect of an emerging chronic global scarcity of food underlines the need to stabilize and eventually halt population growth in as short a period of time as possible. Given recent demographic trends, one can conceive of this occurring in the industrial countries. But in the poor countries, as things are going now, it will be much more difficult to achieve population stability within an acceptable time frame. The historical record indicates that birth rates do not usually decline dramatically unless certain basic social needs — a reasonable standard of living, an assured food supply, a reduced infant mortality rate, literacy, and health services — are satisfied, providing the basic motivation for smaller families.

Thus it is in the self-interest of affluent societies to launch a major additional effort to help developing countries 1) step up food production at a relatively low cost, and 2) generally accelerate the development of their rural areas, which contain the great majority of the world's people and most of the very poor. The second objective is as important as the first. It must not be overlooked, since without it the basic human requirements that make people feel secure enough to limit family size will not be met.

Approaching the World Food Conference

A special UN World Food Conference is scheduled to be held in Rome in November 1974. All of the many aspects of the world food problem discussed in this piece should receive close attention at the Conference. Assuring adequate food supplies at reasonable prices within individual countries may now be possible only through international cooperation in such areas as international trade in food, the building of international food reserves, expanding fertilizer production, research management of oceanic fisheries, food aid, modernization of agriculture in developing countries, and the slowing of population growth. The 1974 UN Conference — coming at a time when world awareness of food problems is at a high level after the dangerous developments of 1972 and 1973 — presents an invaluable opportunity for the nations of the world to reduce the future level of insecurity in an area so basic to human welfare.

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HOUSING



VIEW OF LAGOS, NIGERIA.
[PHOTO: FRAN P. HOSKEN]

The 'Minimum Standard' Approach to Housing and Related Services

Robert Sadove

[The rapid growth of urban areas has overwhelmed the capacity of poor countries to provide urban amenities to many of their citizens. To increase the number of people benefiting from urban housing programs and services, governments should adopt a "minimal standard approach. " High cost home construction programs may be replaced with lower cost sites and services projects in which occupants build their own houses.]

Urban existence for the mounting numbers of unemployed or marginally employed is bleak, and prospects for amelioration still bleaker. Slum populations growing at a rate of 20 percent or more a year in big cities are on their way to dominating city populations. Various cities in developing countries already have shantytown populations that account for 50 percent or more of the city population. Yet, despite the growing proportion of urban poor, municipalities have generally failed to act in their behalf. A World Health Organization document prepared for the 1972 UN Conference on Human Environment has indicated that less than 25 percent of urban families receive water in their houses or courtyards (and even then the water is often unsafe or insufficient) and that only 12 percent of urban families in developing countries have sewage facilities. Few squatter areas receive municipal services beyond some marginal system of electricity supply, and what limited public housing is available is too costly for the poor to afford. Unless determined action is taken to accommodate or counter current trends, urban conditions will deteriorate even further the next decade as urban populations in the developing world soar to an estimated one billion.

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There is no single remedy for urban deterioration. Political commitment to act in behalf of the squatter and other urban poor is an important ingredient. The achievement of political concern and consensus on the need for urban reform is difficult, but it is not the only problem. The urban developing world is everywhere short of resources with which to confront the progressive deterioration in quality of urban life. Partial remedy may be found in international capital transfers and local capital formation, but the scale of needs outweighs even the most optimistic projections of such resource mobilization. The physical and financial dimensions of the problem force the planner to ask new questions relating to hitherto assumed urban needs.

The capital requirements of the industrialization/urbanization process are in all countries related to higher aspirations and standards than in the past. Most larger urban centers have their eyes on the more industrialized countries abroad, which they often resemble more closely than they do minor towns in their own country. This resemblance, or desired resemblance, is to the disadvantage of much of the urban developing world; the costs involved in providing similar conditions for living are far beyond the means available. Provision of modern transport, social services, education, and urban amenities on the pattern of the more developed world requires extremely high capital and operating costs. The question whether the urban developing world can adapt itself to a more practical and less ambitious concept of an adequate standard of living becomes pertinent, if not crucial, to an urban solution.

Lower Standards — Wider Benefits

The necessity for a minimal standard approach to urban development in the developing world can be illustrated readily in the field of housing. In the developing countries, housing needs estimated at a staggering \$12 billion a year are simply beyond national resources. Further, housing costs at the standards perceived are financially beyond the reach of low-income families, making their demand for housing in developing countries largely "noneffective."

The practical aspects of noneffective demand can be demonstrated using India as an example. With a loan of Rs. 8,000 (the reasonable cost of a "minimum" dwelling) at 10 percent interest for 10 years, annual debt service payments would be Rs. 1,304 or monthly payments of Rs. 109. (1 rupee = \$0.13). If every household in Calcutta were prepared to spend 15 percent of its income on mortgage payments — a reasonable first approximation — then, on the basis of the income distribution estimated for the Calcutta population and presented in Table 1, 87 percent of households could not afford such a dwelling. Even if monthly payments were cut by half, the mortgage (not to mention the costs of maintenance and operation) would still be beyond the reach of about 67 percent of the households.

Table 1 - Calcutta.

Estimated Income Distribution by Household, 1971

Income Groups (Current Rs per month)	Housing Expenses Capacity Range: 15% Rent- Income Ratio	Per Cent of Total Households 1971	Total Households 1971 (in 100,000)
Less than Rs 100	Less than Rs 15	16.3	2.33
Rs 100-299	Rs 15-44	46.7	6.69
Rs 300-499	Rs 45-74	16.1	2.31
Rs 500-699	Rs 75-104	7.8	1.12
Rs 700-over	Rs 105-over	13.1	1.87
TOTAL		100.0	14.32

It is accordingly no surprise to find that public housing intended for low-income groups is frequently occupied by middle-income families. In fact, perhaps three quarters of the population in the major cities of the poorer developing countries cannot afford the economic rent of the conventional type of "low cost" housing. Even assuming substantial transfers by way of subsidies, total national savings are quite inadequate for the effort required. The problem is compounded by high land costs, limited mortgage facilities, and poorly organized construction industries. Therefore, for at least the poorer countries of the developing world, public provision of conventional low-cost housing for the urban poor directly or indirectly is simply not a practical proposition.

The necessity of relating infrastructure costs to the incomes of the people is valid for the provision of sewerage, electricity, and other urban amenities, as well as housing. Housing is the greatest urban cost, representing often 60-70 percent of the total. The magnitude of urban investments, however, is such that much more than slight changes in project design is required. A realistic appraisal of what minimal facilities for water supply, sanitation services, transport, educational and health services constitute satisfactory living conditions is basic to successful urban reform. For only by reducing the standards of urban project design to a more spartan though acceptable level, and by seeking less costly means of execution, can the bulk of the needy be included in the benefits of economic development.

Self-help

Self-help is an important aspect of such an approach. In many of the rapidly growing cities, over half the population has, unaided, provided itself with some form of dwelling, however inferior. Such self-help efforts among the urban poor can readily be harnessed for house construction. The payoff is high — radically reduced housing costs, and increased national and personal savings (a tendency among all home builders). Equally significant, self-help housing construction has the important effect of creating employment for those most in need of work. The labor component, often as great as 40 percent of

standard housing construction costs, has been estimated to be closer to 50 percent for minimal standard self-help housing construction. It has been estimated that if minimal standard self-help construction is encouraged in Calcutta, urban infrastructure development can provide at least 35 man-years of employment for each Rs. 100,000 of expenditure — a significant impact in a city of large-scale unemployment. The investment required to generate direct employment would be roughly \$450 per worker or (assuming a 33 percent labor force participation rate) a modest \$150 per capita.

A minimal standard approach to urban development is adaptable to local conditions. Physical, financial, and attitudinal differences among cities in the developing countries color the identification of minimal standards of urban facilities and services, the mobilization of human and financial resources, and the acceptability of urban plans. A flexible, non-uniform approach to urban development increases the complexity of urban planning, but advantage can be taken of the characteristics of a particular environment which help to minimize project costs.

A minimal standard approach requires that assumptions regarding "fixed" requirements and standards be broken down. The assumption that a certain need is fixed may not be valid on close analysis. As an illustration, it was estimated in one case study that all the demands placed on a major water system would involve expansion of storage capacity by 20 percent — an enormous investment. Such an investment would not be required, however, if consumers would reduce their demand for water by a few percentage points for short periods — a method that would correspond to demand if consumers were faced with the alternative of paying the full cost of the water that they received during those critical periods. Costs and benefits vary with each locale and need to be related clearly to each standard proposed.

As noted earlier, successful minimal standard projects have also to take into consideration attitudinal differences. A good example is that of self-help housing construction. In some urban areas the provision of limited housing "core" structures may be required to stimulate self-help efforts while, in areas with more available land, the mere provision of urban services may stimulate self-help in housing construction. Roof loans provided by the government proved successful in generating home building in one case; the provision of minimum urban amenities at low cost appeared sufficient to generate home building in another.

Site and Service Projects

One such project financed recently by the World Bank is a low-income settlement scheme in Senegal. The project, involving the provision of building lots, related social services like schools and health

facilities, and technical assistance (for a follow-on national program) is designed to stimulate self-help housing construction for some 20,000 families. The low-income families for which the project is intended earn incomes too small (\$40 to \$120 per month) to qualify for standard public housing which typically costs \$5,100 per household unit. In fact, under the present public housing program, only 20 percent of all new households (based on the expected income distribution) and less than 50 percent of all existing public housing applicants can afford the \$25 monthly mortgage payments required. Under the sites and services project, installment payments of \$9 a month are within the means of an additional 40 percent of new households, and all existing public housing applicants.

The low cost of urban amenities that make up a serviced building lot in this particular project is the result of carefully limiting standards and using labor-intensive building methods where practicable. With the exception of a few unpaved streets for pedestrians, roads are limited to essential arteries; public water fountains are provided at a ratio of one per 100 households, with the possibility of private water connections at additional cost: pit privies are required for all households except where private water connection necessitates septic tanks; electricity is provided for public street lighting, and available for private lot connections at extra cost. As a result the cost of roads is reduced to one seventh, water distribution to one half, and sewerage and drainage to one third that in public housing operations in Senegal.

The cost of such a serviced lot (excluding power distribution lines and the extension of other primary infrastructure paid for by the government) is estimated at \$290, or \$3.60 per month for 15 years, including land preparation costs, interest, water service charges, and management costs. The project also provides for schools, health facilities, and community cultural and recreational sites — the costs of which are typically not charged to the individual household.

Housing material costs as amortized under this scheme — which are estimated on the basis of self-help housing construction — bring total monthly installment costs up to \$9. Labor costs constitute about 40 percent of private housing costs in Senegal. Consequently, if labor costs are excluded, the cost of a typical dwelling of 60 square meters is reduced to about \$460 which, together with the cost of the serviced lot, can be repaid relatively easily over a 15-year period.

The site and services project in Senegal is a realistic response to the urban needs of exploding populations in Dakar and Thies. At a cost of about \$100 per capita (households average over seven persons), a significant amount of basic infrastructure can be supplied to these areas. It is estimated that the 20,000 housing units constructed over

the next five years would be some 10,000 units more than would be built at comparable cost by the public housing authority under its standard low-cost housing program. Thus the site and services scheme, designed to meet minimal standards and to motivate self-help labor, minimizes costs both to the householder and to the government. Further, the scheme will have the important effect of creating employment (in construction of schools, clinics, public laboratories, installation of infrastructure and preparation of land, as well as construction), stimulating the mobilization of private savings, and breaking the current trend toward deterioration.

Another significant minimal standard program is neighborhood improvement, under which existing squatter settlements are provided minimal utilities and services. Such a program offers a practical alternative to the tremendous social and economic costs of relocating inhabitants and reconstructing urban infrastructure. The existing capital formation in infrastructure in slum settlements is a considerable asset. Upgrading these communities, rather than tearing them down, can be the only realistic response to urban needs, particularly for the poorer developing countries.

Even minimal standard programs, such as sites and services, will tax to the limit the financial resources of most developing countries — if the programs are provided to all those who need them. Yet they are realistic programs. In their choice of urban investment alternatives such countries will have to resolve the dilemma of excessive real demand for high-income and medium-income facilities against the equally real but unexpressed demand for minimal facilities of the low-income groups. Only in their choice of the latter will they effectively tackle the urban problem — the problem of providing adequate conditions of living for rapidly increasing urban populations. At the same time, few programs offer as promising a road to economical large-scale employment generation as these minimum standard programs.

[Excerpted from "Urban Needs of Developing Countries," Finance and Development, Washington, D. C.: International Monetary Fund and the International Bank for Reconstruction and Development; Vol. 10, No. 2, June 1973, pp. 26-31.

Note: For a more detailed description of a sites and services proposal for Calcutta, see Development Digest of July 1969, p. 58.

Sites and Services Programs: The Experience and the Potential

The Editors, Human Settlements

[Guidelines describing the requirements for planning sites and services projects, and the economic considerations that can ensure their success, are presented in a United Nations report.]

A promising and flexible approach to public intervention in meeting the residential needs of lower income families is the method generally referred to as "sites and services," wherein a family is provided a plot of land with minimal services on which to build a shelter according to its needs and means. A plot of land with utilities on it is especially important to low-income households with stable employment who can neither afford a house available in the private market nor quality for one provided by the government. Those families who have the ability and willingness to pay are the optimal clients of new sites and service settlements.

The three physical components of sites and services development are building plots, public utilities and community facilities. The dimensions of the residential building plots are determined by the density of the project. The location of the building plots must be considered in relation to employment and other urban services. Public utilities include primary utilities, such as water and sanitation, and secondary utilities, such as electricity, public lighting, sidewalks, paved roads, gas installations, and telephones. Community facilities refers to local urban services linking a larger array of government and private services such as small businesses, schools, markets, shops, police and fire protection, religious or cultural centers, and social welfare centers such as clinics, employment agencies, creches or kindergarten schools.

The most common types of sites and services development are: (a) the subdivision of land alone (i. e. the provision of only a building lot); (b) the subdivision of land and the installation of basic public utilities and some community facilities; (c) the subdivision of land with a full complement of public utilities and community facilities; and (d) the installation of some combination of public utilities and community facilities in existing residential areas. The generic team, sites and services development, is, therefore, employed to describe both the preparation of land to facilitate the construction of individual houses and the up-grading of residential areas which have already been settled.

Table 1. Significant Sites and Services Experience as of mid-1972

<u>Country</u>	<u>Numbers of building plots in new sites development</u>
Burma	40,000
Cameroon*	4,200
Chile*	180,000
Ghana*	
India*	110,000
Iraq*	56,000
Kenya*	3,000
Korea*	55,000
Kuwait*	
Morocco*	7,500
Pakistan*	150,000
Panama	1,500
Puerto Rico	11,600
Senegal*	15,000
Sudan*	13,000
Tanzania*	
Thailand	4,450
Turkey	50,000
Venezuela*	20,000
Zambia*	18,500

*A sites and services item is included in the National Development Plan.

Another example of sites and services development is the inner city block, owned by a government and leased to a client or company which, in turn, rents out space on a temporary basis to transient occupants. The poles of India surrounded by high walls, with guarded gates and rent collectors at the door, exemplify the physical form of this idea. This method is advantageous to governments since they can continue to

hold urban property from which they can profit in later years when its value has risen, particularly in new towns or rapidly expanding towns. The government gains revenue from the interim use and need not worry about more permanent squatter settlements being built on it, while recent immigrants gain temporary lodging. Rents collected on a weekly basis and the temporary structures inside the walls emphasize the transitory nature of the inner city rental space, while the immigrant hopefully gains access to day work and temporary jobs which allow him a foothold in the employment process and access to more permanent jobs and urban services.

Project Objectives for Sites and Services

Seven basic guidelines are described here to serve as points of reference by which the issues, decisions and trade-offs in sites and services investments can be identified.

1. Sites and services should improve the welfare of low-income people by increasing their access to urban services. The elimination of disease through provision of medical services and installation of potable water and sanitation facilities has rapidly improved living conditions for existing settlements. For new settlements the staging of utilities and community facilities should begin with provision of a potable water system and a method of sewage disposal. Further improvements should be based either on the effective demand of the inhabitants or, if revenues permit, a higher quality of services for all inhabitants of the city. In any case, investment should follow the client population's order of priorities for utilities and facilities.

2. Sites and services should be a method for guiding and controlling urban growth by regulating land use and land speculation. In the majority of countries with low-income economies, over thirty percent of the urban population lives in slums or uncontrolled settlements; in some economies the proportion is as high as fifty and even eighty percent. Controlling, guiding and, where necessary, preventing the formation of these settlements are, therefore, urgent tasks which sites and services methods can fulfill as part of a residential settlement policy.

To gain control of the land market, sites and services schemes could be implemented through quasi-public organizations with power to condemn, buy, hold and improve land. The lack of taxation of private owners, which fosters land speculation, is another problem that must be solved. A self-evaluation tax scheme has been used in agrarian reform in Colombia, wherein the owner is responsible for reporting the value of the land, with the agreement that the government may purchase it at any time for 100 percent of declared value. Such a procedure might also be used for purchasing valuable urban or peri-urban land being held off the market for speculative purposes.

3. Sites and services should orient government housing agencies toward becoming more self-sustaining. The capability of the executing agency to become self-sustaining will determine whether it can continue to serve low-income households' residential needs. While international loans can assist in constructing sites and services projects, the ongoing success of the project will be limited if a viable organization and program does not remain upon completion of the loan. Sites and services programs should be looked on as an integral part of national housing and urban development policy. Existing subsidies for middle and upper income housing should be gradually eliminated. If the government constructs housing, economic rents should be charged. In Argentina, for example, the government attempts to make a profit from its middle income housing schemes in order to subsidize lower income housing. In Turkey sites and services are sometimes located near to high income housing, enabling much of the total infrastructure costs to be charged to those with greater ability to pay.

An indispensable element of a self-sustaining program is an efficient rent or mortgage payment collection system geared to the habits and convenience of the client population, so that payments arrears can be minimized. A major problem is that conventional housing finance institutions, such as savings and loan associations, do not usually have a policy of serving the needs of low-income families for housing finance, and have not usually developed effective collection techniques for obtaining housing payments from such households. In the light of the indispensability of an adequate collection system and satisfactory housing financing institutions for low-income families to sustain a program of sites and services, new types of organization must be designed. For example, if local community organizations could be enlisted to assist in project administration and held largely responsible for monthly collections, client households would then be accountable to their peers and not to an impersonal government department.

4. Projects should be planned to minimize subsidies. The most important factor in minimizing subsidies is designing the program according to the capacity to pay of the target population. The prevalence of high rates of default, numerous plot resales, and large subsidies demonstrates that sites and services projects have usually not been designed with regard to ability to pay. As much socio-economic information as possible should be gathered on the general target population before design standards are established. While this information is often an approximation, its utilization is of the utmost importance to the projects' financial viability.

The physical design of projects can be planned to minimize subsidies. For example, one method of designing projects to become financially self-sustaining is the mixing of sites and services schemes with higher income housing. In these mixed-unit developments, much

of the cost of infrastructure and community facilities is included in the debt repayment schedules of the higher income units as, for example, in Turkey. The percent of low-income population in the vicinity of a project area is often so great, however, that this technique has serious limitations. Perhaps a more effective technique is to include commercial and industrial uses in project design, selling or leasing this land for relatively higher prices. Singapore and Hong Kong have integrated garment and electronic factories with their housing projects, and this land is then sold at higher prices than land for housing.

Columbia has begun to utilize an effective technique to recover the costs by charging all utility installation costs to the occupant family. The Colombian Public Housing Corporation (ICT) loans funds to municipal utilities to install the services. Installation costs are then pro-rated and recovered with the monthly charges for consumption, the municipal utilities repaying the loan to ICT. If payments fall in arrears, the service is suspended.

5. A sites and services project should generate investment in individual household dwellings. A credit system for the purchase of materials and labor is essential to stimulate house construction. Low-income families usually have no desire to accept long-term burdens on their limited and unassured incomes. Successful experience in credit cooperatives suggests that they prefer small, successive short-term loans geared to immediate goals such as adding a room or making a permanent roof. For example, in the extremely poor region around Puno, Peru, much of the distrust of institutional credit was overcome by the initiation of local credit cooperatives in the early 1960s. After a few years loan requests came for items which had a longer economic life, particularly for building materials to make homes more permanent, and the credit associations were able to supply the inhabitants such materials from their own working capital. When mortgage requests for loans for whole houses began to come in, they obtained credit and seed capital from international sources. But once the switch to mortgage loans from small materials loans was institutionalized, mutual lending systems began to serve more middle-income people with the savings of lower-income people.

Community improvement projects in Brazil, responding to resident initiative, included loans to ex-favela residents based on receipt of estimates for materials quantities for any portion of house construction which the resident desired to undertake. The lender made out a check to the resident, but payable only to the account of the materials supply company. The materials loans, which only required an engineer to check estimates against government published price lists, avoided usurping the private retail initiative of many of the favelados and other small businessmen. By acting only as the

lending agency, administration and distribution difficulties involved in the direct supply of materials can be avoided by the community housing organization.

6. Project administration should enlist the cooperation of community organizations. The social cohesion created by numerous "grass roots" organizations within many squatter settlements should be recognized as a potential force in the administration of site and service projects. Many local unofficial community organizations can be found within most low-income urban settlements. A study by a Presidential Council on the Squatters of Manila, Philippines, for example, pointed out that a survey of a slum squatter community in Manila, found twenty-nine organizations existing in a community of 2,625 families, and that 65 percent of family heads interviewed belonged to at least one organization. Because of the rapport usually existing between these organizations and their members, they might be transformed into an effective means of infusing capital into the settlements for improvement while mobilizing the limited resources of the resident. Administrative constraints which are bound to set in as a sites and services program is implemented on a large scale might be neutralized to the extent that local organizations can be utilized for collection responsibility and lending authority.

Ideally, these organizations could provide the following services: a) Collection of payments for the original sites and services loan: the borrower would be responsible to his peers and not some impersonal government bureaucracy; b) Allocation of small housing improvement loans: the borrower's neighbors and relatives would know his loan-carrying capacity more intimately than a government bureau; c) Mobilization of savings within the community: local savings and credit associations could provide an alternative to official savings institutions which are often not utilized by low-income groups; d) Accelerated development of individual sites: access to improvement credits would stimulate the individual investment process; e) Provision of community services: water, sewerage, and electricity could be offered through the local user's associations.

7. Projects should increase the economic opportunities for the occupant population. The proximity of low-income residential settlements to sources of employment can be a determining factor in the economic results of sites and services projects. Experience reveals that sites and services projects located far from employment centers because of low land cost can be financially disastrous to the project occupants. In Lusaka, Zambia, for example, squatters were moved from a distance of two miles from center city jobs (a feasible walking distance) to over eight miles. In Manila, Philippines, the inhabitants of the Sapang Palay resettlement project were located over 20 miles from their original homes, and only 5 percent of household heads were

offered jobs near the project site. The inhabitants must bear both the extra cost of transportation to work and the extra cost of goods purchased locally. Both costs appear to rise in direct proportion to the distance of the project from the center city.

Other economic benefits may accrue to residents from the actual development of a sites and services project, namely equity and employment benefits in construction. Of the two, equity benefits are by far the greater, though they represent a potential danger. While net gains can be realized from sale of the improved property by owners who made the improvement, or sale of the shelter built on the property, this practice undermines the original purpose of the project when sales are to large speculators rather than to new low-income occupants. In order to avoid plot speculation in a project being developed in Senegal, the IBRD has stipulated that, when the occupant has a clear title, he must first offer to sell the plot and permanent dwelling to the government. If he does not have a clear title, he can only sell to the government. On the other hand, income from room rental within a house should not be discouraged. It helps support occupants, and is often applied to physical improvement on the site. More importantly, the room rental can meet part of the demand for cheap, unsubsidized accommodation for recent migrants and other lower income groups searching for employment.

Although employment benefits from constructing the project infrastructure are limited, they could be increased somewhat through self-help labor in the installation of utilities. There may also be employment arising from subsequent housing construction through payments for assistance in building, and in the growth of dependent building materials industries. Another economic benefit of sites and services projects could be obtained from the provision of space and utilities for commercial and industrial development.

[Abridged from "Sites and Services Programs: The Experience and the Potential, " Human Settlements, October 1972, issued by the Center for Housing, Building and Planning, Department of Economic and Social Affairs, United Nations, New York, Vol. 2, No. 4, pp. 1-15.]

Some Thoughts on Urban Development and Housing in Africa

Franziska P. Hosken

[Vigorous action and new approaches are needed in response to the urgent need to improve the living conditions of the majority of Africans who live in towns. Planning must involve the people it concerns and take into account their needs and ways of living.]

Africa's populations are still nearly 90% rural and most people are engaged in subsistence agriculture, but it is currently experiencing an extraordinary migration to urban areas. As a result, all African countries are beset with the acute housing problems that attend rapid urbanization. Inadequate water supply, poor roads and limited or non-existent sewage disposal plague all urban immigrants. While one new governmental approach to urban problems, i. e. a site and services program, offers potential relief, the rate of urban immigration makes time a critical factor and renders candor essential in evaluating current programs for relief of urban slum dwellers. The following is a summary of my suggestions about the urban and housing problem and its solutions in African countries following a tour I made of 15 sub-Saharan African countries in the summer of 1973.

The first priority, I would say, is to get something done: to get it in place and built, to get action. Show-how rather than paper know-how is what convinces people, including politicians. There is nothing so persuasive as the real thing. In Africa where city populations will double in the next 10-15 years or less, we need some new pragmatic solutions. There simply is not enough time for achieving useful results if

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it takes three years to plan a few water lines, and local roads, as for instance in squatter improvement programs. By the time one site and services program is planned the population of that city will have grown by one third — and it will have grown by that much again before the original squatter population has built their homes.

If urban programs are to work, they must address themselves directly to the people and their needs. There is enough experience available now to transfer initiatives and solutions; urbanization requires no sophisticated technology, but only the most basic tools. But the planning in this field is too often entirely remote, not only from people but from all political processes. Frequently plans are created in a vacuum. Furthermore a more viable way to communicate the content of plans must be found. The countless unused, professionally made plans in cities all over the world demonstrate the futility of the more elaborate physical planning efforts, relying on expensive foreign consulting teams. Finally, human development programs, which are part and parcel of all successful physical development programs (for example in the new towns in Israel, or Ciudad Guayana in Venezuela), are especially important for urban immigrants who virtually are starting a new way of life. In Africa the rate of urban immigration is greater than anywhere else in the world, but few of the people involved have had much, if any, experience or history of urban living. Every effort should be made to initiate some community service programs — based on self-help and cooperation — simultaneously with self-help and cooperative building.

It seemed to me that in all the African cities I visited, and on every level — that is from the individual house and neighborhood to national plans — such a thing as participation by the consumer, or eventual user, simply does not exist. All planning is for people, never with people. There are no mechanisms to begin to develop a semblance of democratic process on the grass roots level by fostering participation. In some countries the political party organizations function as local community centers — even in illegal squatter settlements; but there are no ways for views and opinions to filter up through the party. In addition, most urban development plans are made under the direction or with help of foreign technicians who have little idea who the people they plan for are, how they live, or where they come from. The contradictions are obvious: while self-help is encouraged simply because there is no other economic choice, the people so encouraged have no way to make themselves heard in any of the decisions pertaining to their larger environment, and live under conditions over which they have virtually no control.

One consequence is that many governments try to settle squatters miles out of town (where they are conveniently out of sight and no

longer a political hazard or eyesore) and then fail to provide any viable transportation. This should be prevented: the condition should be made with all site and services programs seeking international agency support that either adequate transportation must be made available into the city or that site and services projects must be located within a reasonable walking distance from the town and from industrial areas or potential sources of jobs. Since all financing programs are predicated on the inhabitants' paying some rent for their urbanized plots, it is essential to locate the sites in such a way that inhabitants have at least a chance to get some work and have access to a variety of employment opportunities. This may require land taking in the city. It is necessary to attach land use conditions to the siting of such programs — out of self interest if nothing else — as there is little or no chance for plot holders to pay any rent if they are moved a great distance from town and have no transportation to jobs.

The transportation issue has not been solved in satisfactory ways in any city in Africa. It is one of the most pervasive problems that is being ignored. Only in the cities where the immigrants run their own jitney taxi service is transportation at least available to some people — though of course taxi transportation is too expensive for most. Wherever one goes to housing settlements one can see large numbers of people waiting at bus stations. Buses are always overcrowded in the worst way and they are old, unreliable vehicles most of the time.

Another essential requirement that should be attached to site and services programs by international agencies is not only the freedom for settlers to build but the freedom to start their own petty trade and service enterprises. These flourish in illegal squatter settlements, but are often ruled out of housing projects or of any programs under the jurisdiction of public agencies. Petty trade is often the only way some family members (for instance women) can make any money. At the same time these small shops fulfill a vital service function for those who have a job and need these services (or they have to obtain them at higher cost in the city or outside their community).

House Construction and Materials

Western houseforms ignore the needs of African families and the African family structure. They are especially unsuitable for rural improvement schemes and in areas where polygamy is practiced, since they do not provide adjacent units for different wives to keep their children. However, traditional buildings may be unsuitable for urban areas because they use materials abundant in the countryside which are often highly perishable. In Dar es Salaam some research has been carried on in adapting traditional house forms by making them more durable yet preserving the essential forms according to family needs. The research carried on at the University in Kumasi, Ghana, concerns

itself in practice with devising better and more permanent building methods according to the living conditions of the rural families involved.

It must be noted that as soon as immigrants come into the cities they seem to want to copy what they find there, i. e., European housing. This is of course reinforced by institutions such as Housing Authorities of all kinds who always have built (since colonial times when many of these institutions were founded) drastically simplified versions of Western housing. This has by and large become the accepted model in all urban areas, regardless of what country is involved. Even in site and services programs one can see, with a few exceptions, that only Western type houses are built. This tendency is reinforced by the nature of the available building materials in urban areas, especially where building material stores are making manufactured industrial products available for credit. In terms of the Africans involved, it is also a matter of prestige -- especially for the families as well as the public authorities and politicians involved -- as indigenous African housing is considered old fashioned and just plain bad. To this must be added that traditionally many tribes keep moving to new agricultural land so that their housing is not permanent.

To continue indigenous building forms is often difficult, as traditional building materials are frequently unavailable in towns. Yet many housing experts take the view that one must steer away from transferring alien building forms and construction methods and that immigrants should be encouraged to continue using their traditional methods -- only using more permanent materials. Without that, it is clearly impossible to use a Western credit system based on mortgages for financing housing. In the case of countries like Malawi, where blocks can be made right from the ground of the building lot and where people are building solid houses out of the local materials, this obviously should be encouraged. Since financing agencies (for instance, the IBRD) are involved in setting standards that have an influence on the occupants' ability to pay rent, these housing construction criteria must be considered -- not in the abstract but according to each area and specific conditions involved. Criteria will have to be developed fitting each case, region and country; rural and urban housing require different solutions. A whole set of emotional considerations -- also of the country's leadership -- are involved, quite aside from practical considerations. A case by case cost-benefit analysis is in order whereby the social costs (including such costs as failing to employ local labor or using capital rather than labor intensive methods, etc.) must be put into the equation.

Land Use and Urbanization

Land, its ownership and use, especially in and near towns, is a critical problem in Africa that is not well recognized. Land seems to be an unlimited resource. But given the doubling of population in African countries in the next 15 years and the quadrupling in a generation, urban land will become a most critical problem in our lifetime.

The determination of land ownership rights is as vital an issue as land scarcity. Traditionally land in rural Africa is a common resource that is held in trust by the chiefs for the use of all members of a tribe. Anyone can till any piece of land and enjoy the fruit of his labor; but no one can own a piece of land in the Western legal sense. In very general terms, each family gets a piece of the land from the village headman to grow the crops for their own need. When one piece of land is exhausted the family moves on. Land was always plentiful and free. In contrast, wherever colonists went, they acquired land from the chiefs for large commercial farms or to build cities. Land ownership patterns brought from Europe were then transferred to Africa by the different colonial powers. Therefore most countries in Africa today have, in and around their cities, land use and legal ownership patterns of the Western colonial power that settled and ruled the area.

The situation in many cities is critical now as immigration has increased. In the past, the colonial powers strictly controlled the movement of Africans into the cities (as still happens in South Africa and Rhodesia). Therefore the post-independence push to go to the cities is strong, and it is politically impossible to restrict immigration in any way. The situation is made more explosive by the fact that in many cities the immigrants are, or soon will be, a majority of the population, squatting on illegally occupied land. Illegal, that is, according to Western ownership concepts that simply do not exist in the rural areas where the immigrants come from. One of the most urgent tasks, therefore, is to clarify the urban land ownership issue. In Zambia, for instance, a number of site and services programs are planned in the expectation of IBRD financing (through long range low-interest loans). However, the land ownership of the squatters has not been decided and is under debate. So far the tribal ownership of land has prevailed in the rural areas, while the state controls most of Lusaka's land. The question is: will the new immigrants be offered outright ownership over their urbanized plots, or will they lease the land for different periods of time from the government? If the individual plot holder gets outright control, he will be able to sell and deed his land. In due course the land will be bought up by wealthy private interests for the purpose of land speculation. The poor immigrant, who sold the land without any real knowledge of its true value, will have nothing. If the government retains ultimate ownership of the land, leasing it long term, the immigrant will have a better chance not only to keep his land but to protect his future and to improve his life.

Zambia: A Hopeful Note

Zambia is the most urbanized country in Africa: about one third of its population lives in urban areas and the percentage is growing. Despite the government's efforts to minimize the imbalance between the rural and urban sectors, the growth of Lusaka has been one of the highest in the world: it has been quoted as 12-15% annually. Since the immigration to the copper mining towns has gone on for a number of years, Zambia has much more experience than any other African country in dealing with these problems and they have done so rather effectively. Nevertheless on my tour of Ndola, the copperbelt town which has done most with a variety of urbanization programs, I still saw large unimproved squatter settlements on the low land where some water is available. Yet it is clear that the programs in Ndola, which are said to be among the best in the mining area, should be a model for all of Africa. The experience gained here should be used especially in West Africa, Kenya and elsewhere where the myth still exists that "nothing but a three room cottage with kitchen and bath will do for our people." The result is that "our people" sit in serviceless, overcrowded, unsanitary shacks while the few housing units built go to the politicians' middle class friends.

Ndola has the greatest variety of settlement programs I have ever seen. They include the most basic and inexpensive self-help schemes, consisting of a deep pit latrine/plot with basic dirt roads and water points every few 100 yards on the road, almost complete houses where all the family needs to do is to build the walls for additional rooms (the roof is built); and a number of intermediate variations adjustable to the particular site or financial condition. This experience emphasizes the fact that it is possible to offer a variety of alternatives within one project; for example, to provide some models in form of a few publicly built houses, while the rest of the plots are available for self-building. In all the Zambian programs the family is compelled to build a minimum house in a given time or forfeit the plot. In some cases they can squat on their land and build a temporary shack of sorts, but they have to at least start on a permanent structure within a given time.



Above: Self-built housing in Zambia.

To achieve a certain amount of uniformity and a better appearance, as well as to prevent speculation in building materials, some programs in Ndola stock and sell building materials such as tin (or asbestos) roofing, window frames, cut lumber pieces, roof trusses, concrete blocks, and more. They also make credit available to the immigrant for buying materials, and technical help is available in the form of plans for how and what to build. The construction most frequently is of concrete blocks or some kind of blocks covered over with plaster for protection and painted. Occasionally traditional mud and wattle are used, usually covered with plaster to make them weather resistant. Wooden boards or shingles are almost never used. Wood sticks (bamboo or reed) form the frame of traditional mud and wattle construction. Tin roofs predominate: asbestos roofing is available at some building material stores and a few people use other roofing materials including traditional straw. But corrugated tin is most frequent throughout Africa as it is easiest and least expensive and it is available anywhere.

The lots are usually large enough so that the family can have at least a kitchen garden and often more, for instance they grow corn and keep some chickens and occasionally a sheep or goat. There often are banana palms. Many people grow at least some flowers, trees or shrubs which soon cover the new bare areas with greenery. Wherever the housing regulations inherited from colonial times don't interfere (and most site and services projects are not strictly regulated) there are a variety of small shops and industries. There are carpenter shops, auto parts and repair shops, cobblers, bicycle repairs, barbers and hairdressers, dressmakers, and more. All this takes place mostly in between the houses on the open spaces that function as outdoor workshops, sales areas, and living rooms. Thus, that site and services programs create slums is as much of a myth as that the government will build a three room cottage for every family.

In Zambia the government has recognized that the real need is not just housing but urbanization: that is, the building of planned infrastructure and roads and the organization of community facilities and services which the immigrants cannot get for themselves. The location of the sites cannot be left to wherever the squatters happen to settle — which is the way most cities expand now in Latin America or Asia. But site and services projects which frequently are complete communities must be planned, coordinated with transportation and industry, and must be part and parcel of the city's development plan.

[Excerpted from Urban Development and Housing in Africa, an unpublished report, Fall 1973.]

A New Look in Housing Assistance

Peter M. Kimm

[The Agency for International Development (AID) recently adopted a Shelter Sector Policy which defines its role in housing and other shelter programs. Emphasis is on assistance to developing countries in the formulation of housing policies and the development of housing institutions that will be responsive to the shelter needs of the country, particularly those of the lower income groups.]

Over the past decade AID provided housing assistance to developing countries in the form of grants, concessional loans, and housing guaranties. In recent years, the principal resource available for assistance in the housing and shelter field has become AID's housing investment guaranty program. To date, the guaranty program is the largest source of international assistance for housing activities in developing countries. Under this program, the U.S. Government makes long-term financing available for housing activities abroad by offering a guaranty of repayment to U.S. lenders who make long-term loans for AID-approved housing activities. Interest rates and terms reflect the current money market in the United States, which in turn reflects worldwide trends. The yield and degree of security to the lender compare with alternate investment opportunities. A fee is charged to cover operating expenses and the program now operates on a self-sufficient basis. Existing legislation permits \$880 million in guaranties to be authorized. As of May 31, 1974, some \$619 million of this amount has been approved by AID, and some \$375 million actually disbursed by U.S. lenders to housing institutions in Africa, Asia and Latin America.

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The guaranty program began in Latin America in 1962 with the primary objective of promoting housing projects which would act as "pilot demonstrations". The rationale was that large-scale projects, frequently involving a U.S. builder, would result in a beneficial interchange of technology and expertise. This approach was substantially broadened in 1965 to include projects involving local housing finance institutions including those sponsored by trade unions or cooperatives, lower-income housing, and local long-term investors. Today, virtually all new housing guaranties are negotiated directly with non-profit sponsors, usually host-country housing institutions, and ordinarily do not involve U.S. builders. In the late 1960s and early 1970s, the principal thrust of the housing guaranty program has been the development and strengthening of housing finance institutions.

Last year, AID decided to reassess its housing programs and priorities, the result of which was a Shelter Sector Policy Paper appearing in August of 1973. The policy approach is based on a recognition of several circumstances, one being that external assistance will not be able to provide significant percentages of the capital needed to resolve the housing problem in any country. It is, therefore, of critical importance that foreign assistance be directed to the creation and strengthening of the policies and institutions needed to address the total housing problem of a country over the long haul, recognizing the very large and critical needs of the lower income groups. Important among the institutions to be assisted are those that amass local capital, such as savings and loan associations, with their demonstrated success in a broad range of cultural settings and in countries at widely varying levels of development. AID will also be examining ways in which such institutions can play a greater role in meeting needs of the lower income groups.

The approach also recognizes the importance of assisting countries with which AID does business to at least begin to formulate a conscious national housing policy. Very few countries have rational, comprehensive housing policies that address the needs of all of their citizens. Housing, particularly low-cost housing for low-income groups, can be built with local materials and largely unskilled labor. The anticipation of home ownership induces many families to save money that would otherwise have gone for current consumption. A well conceived national housing policy can produce substantial increases in the number of housing units, with significant social, political and economic benefits, and at minimal cost in terms of competitive materials, labor or capital. Obviously, such a housing policy must be developed and adopted by each country in its own political and social context, and considering its own level of resources. However, there are some general guidelines which apply in one form or another to almost every country.

1. A national housing policy must address the needs of all the people, including the many who will not be able to afford a "standard" house with several rooms, indoor plumbing, etc. Therefore, government policy must include alternative solutions to the housing problems of lower income groups. Some form of minimum shelter program is required, such as a "shell" house consisting of an enclosed structure containing minimum basic fixtures; or the "site and service" approach, a plot with minimum services, such as water and waste disposal, on which the resident may build the kind of shelter he can afford; or possible sites without services but with provisions for the future installation of basic services.

2. Very few developing countries are in a position to provide even minimal housing subsidies for any meaningful percentage of their population, and policies of significant subsidy have in fact generally resulted only in tokenism. As a practical matter, subsidies must be limited by available resources, and housing policies generally cannot depend on them to any large degree. The hard reality is that a housing policy in a developing country should call for the production of a large number of very minimum units with little or no subsidy. This means that the homeowner's payments must be sufficient to cover the true economic cost of the shelter.

3. A related issue is the question of standards. Insistence on unrealistically high standards has put the cost of the simplest legal house beyond the means of many people in developing countries. The need to reduce legal standards to match purchasing power is clear.

4. In all countries, a substantial proportion of home construction, repair and maintenance is done by the owner-occupants. This tendency should be encouraged and helped where possible with assurance of tenure, and, selectively, with technical assistance, small loan programs or other incentives, to maximize this productive capacity for the economy.

5. A major consideration in housing policy is interest rate policy. Many countries have stated as policy that loans to lower income groups must be at low interest rates. The objective is commendable since monthly payments at 12% interest over twenty years are half again as high as payments on the same loan at 6% interest. The real-world effect of a policy of setting interest below prevailing commercial rates, however, is to dry up the flow of private funds into low income housing mortgages, thereby limiting the capital available for such mortgages to government budget allocations and concessional loans from development agencies. Neither source is likely to furnish capital in anything like adequate amounts over the long run.

Low income families pay rents that reflect returns on capital far in excess of ordinary commercial interest, e. g. , from 30% to 100%

per annum. Virtually any low-income person who could amortize his home at, say, 12% interest over twenty years would immediately begin to pay less per month, and for a home he would some day own. The conclusion appears clear — that many countries need to adjust existing policies to permit an adequate flow of capital to lower-income groups at market terms, instead of providing token amounts of money at concessional terms.

AID would like to encourage serious consideration of these guidelines. When requested, AID has and can provide short term technical assistance to countries as they formulate their own housing policies and strategies, and as they strengthen the institutional framework necessary to implement these policies. AID will also consider financial assistance for those countries that are prepared to develop plans and policies designed to take positive steps to resolve their housing problems, and such assistance will be used in support of the self-help efforts that are essential to successful development programs. Priority will be given to shelter programs which include significant components that address the needs of lower income groups.

[Extracted from a speech to be delivered by Mr. Kimm in Rio de Janeiro, August 20, 1974.]

Housing in Development Strategy

Lauchlin Currie

[For countries with some modern industry and further agricultural potential, but whose manpower and industrial capacity are seriously underutilized as a result of foreign exchange constraints, a way out of the impasse is proposed through a shift in demand and production toward mass-consumption goods of low import content. Housing could play an important role in bringing about such a shift; Colombia is used to illustrate the possibilities.]

The theme of factor proportions in development has assumed peculiar importance in the literature of development because of the apparent failure of the market or pricing mechanism to combine scarce capital, especially imported and incorporating modern techniques, with abundant labor supplies in such a way as to satisfy simultaneously the criteria of full employment and maximum output. Despite various helpful suggestions since the early 1950s designed to improve the functioning of the pricing mechanism, it cannot be said that the dilemma has been satisfactorily resolved. Labor remains badly used and underutilized in underdeveloped areas and the economies are deprived of the benefit of physically higher productive but costly technical processes. Such economies are therefore operating far below the production possibility that would result from using more fully and efficiently both the technical processes embodied in capital imports and their domestic resources.

Statement of the Problem

It is not really satisfactory to state the problem in the customary terms of full employment versus maximum output. Full employment at high remuneration is

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one extreme on a wide spectrum. The mal-use and under-use of human resources in underdeveloped countries has far greater significance than is represented by reported unemployment. It includes the employment of all those with very low productivity, with or without the use of much capital per worker. The problem of factor proportions applies to an economy as a whole and not to individual industries or processes: if abundant capital in a developed country is well combined with some labor where it is technically appropriate and pays, much labor may be used very remuneratively elsewhere combined with little or no capital. Capital deepening or shallowing as such is never advocated as a generalized policy in developed countries, and it will be argued here that it is not helpful to discuss the problem in such terms in underdeveloped countries. What we should be concerned with is the more effective use of labor.

The other horn of the dilemma, maximum output, is similarly not well stated. In poor countries, where any possible annual increment will be limited, it is especially necessary to keep in mind the production of what for whom. The objective for underdeveloped countries proposed by Viner almost 20 years ago — to raise the economic well-being of the mass of the people — still appears to be more appropriate than gross output regardless of type or distribution. It would seem to provide a better guide for the determination of investment criteria or the allocation of resources and a better basis by which the success of such criteria may be judged.

A third qualification appears desirable. In the 1950s major emphasis was placed on capital formation in general, with that portion of imports represented by capital goods included in capital, and it was fashionable to talk of capital or savings constraints. In the 1960s the emphasis shifted to the foreign exchange gap or constraint. Obviously the source of underdevelopment cannot be found in a single constraint applicable to all countries at all times; constraining elements may vary in importance over time and as between countries. Usually it appears that the foreign exchange constraint is the more restrictive, as most loans must be repaid and it is difficult for underdeveloped countries as a whole to expand exports. Domestic savings and investment, on the other hand, appear to follow rather than precede the increase in production. Lack of internal capital may often be a constraint, but here we will be concerned more with the exchange constraint and consequently with that combination of imports and domestic resources which lessens this particular constraint.

I propose, then, to redefine the problem under discussion from being one of attaining full employment and maximum output to that of utilizing available foreign exchange resources, modern techniques and national labor resources in such a way as to achieve the most rapid rise feasible in the standard of living of the poorer sector of the population through

the maximum production of goods and services of mass consumption. The situation today in those underdeveloped countries that have an industrial base, an infrastructure of public services, and at least a modest volume of natural resources and foreign exchange is such that the pricing mechanism does not appear to be equal to the task expected of it. A variety of factors, including — ironically — labor codes and social laws, have impeded mobility, perpetuated dualism, resulted in cost-push inflation, reduced incentives to invest and to utilize equipment fully. Single shift operations predominate in a short work year and raise costs. Enclaves of highly paid workers with many fringe benefits help to keep industrial goods relatively high-priced. The techniques and equipment available are those developed in high-wage, capital-abundant economies and characteristically are capital intensive, lumpy and non-divisible, and labor saving. Local entrepreneurs have neither the incentives nor the means to develop, refine, modify or adapt these techniques to combine them with the use of significantly more labor.

Moreover, the gap in physical productivity between man-power and tractor-power, between a mule and a jet, between a sickle and a combine is too great to be offset by still lower wages. The labor force is doubling every 20 to 30 years in many of these countries, and the urban labor force even more rapidly, so that while the pricing mechanism is weakened the task it is expected to perform is much more difficult. The distribution of income is characteristically highly skewed and the demand for luxury-type articles, capital equipment to make luxury-type consumption goods, and travel, medical and educational expenditures abroad, is inelastic and little responsive to price or exchange rate rises. The foreign exchange demands of the public infrastructure are likewise inelastic. Available exchange for additional productive capacity, intermediate goods and raw materials may appear inadequate and what there is may afford little employment. The foreign exchange constraint is severely felt, although, of course, there are other factors. Undoubtedly much more could be done than is being done, but in terms of existing institutional factors and the pattern of production and distribution, the exchange resources available permit only a slow growth in employment and in output of goods of mass consumption relative to reasonable expectations and social requirements.

Some Suggested Remedies

Those writers who have emphasized the exchange constraint suggest various policies for accelerating development. Vanek, for example, accepts other factors as given or unalterable and finds "the only way out of the impasse is the substitution of foreign resources...for deficient savings and/or exports." Nelson, in answer to Vanek, feels that more can be done to lessen the constraint by avoiding, for

example, over-valuation of the exchange rate, by lowering real wages relative to exchange rates, raising rates of interest and pushing further substitutions of imports. A better use of the pricing mechanism would assure a better rationing of the scarce factor (i. e. , better factor proportions), as well as increasing exports. Such arguments are, of course, theoretically valid. One can only question the adequacy and the acceptability of recommended policy. It has proved most difficult in practice for all underdeveloped countries not blessed with petroleum to expand exports significantly as a group, and the magnitude of the soft loans and favorable trade policies obtainable from the developed countries are of limited help. A policy of dismantling controls, including labor codes, is generally unacceptable politically.

A possibility that at first sight appears more feasible is to favor labor-intensive techniques. Although the possibility has been frequently mentioned, practical suggestions have usually been limited to simple public works and farm implements. It is apparently difficult to modify efficiently capital equipment requiring little labor to operate. As for labor-intensive projects, it must be emphasized again that our interest should not be in employment only as an end in itself but also as a means of securing a high output of goods of a type that may lead to higher consumption by the currently underemployed. Made-work of low productivity should perhaps not be ruled out, but must be regarded as a possible recourse if there is no way of creating a more worthwhile utilization of human resources.

Other theoretical possibilities may be mentioned. A massive redistribution of income might be expected to lessen the pressure on foreign exchange by reducing the propensity to import, so improving factor proportions and employment. It is again doubtful if this would be feasible in the short run except with a Cuban type overturn, which would change the whole nature of the problem. Finally, a cessation of population growth would in time lead to a cessation of the growth in the urban labor force so that any gains in better employment would be permanent, net gains. However desirable this may be, it is hardly a practicable hope for the short run.

Goods for Mass Consumption

This brief sketch of possibilities indicates that the problem is capable of being treated from many angles but that none of the approaches suggested appears to offer much hope of a rapid and effective solution, partly because the real problem has not been correctly stated. It is that of utilizing exchange resources to secure a redeployment of the work force from less to more remunerative occupations, producing goods of mass consumption for which there is effective demand. We need some way of translating needs into effective demand; something comparable to the real demands that have to be met in wartime and

that will not be checked by a shortage of imported equipment, intermediate goods or raw materials.

Turning to the possible solution of the problem, it is easier to state in theoretical terms than in actual policy. We will assume that there is no deficiency of monetary demand, that constraints on expansion of output are not general, are man-made and removable therefore by institutional and policy changes, but that an expansion of output so attained will sooner or later be constrained by a shortage of foreign exchange. Theoretically, the problem could be resolved in more or less degree if internal demand could be directed towards a good or a bundle of goods and services of mass consumption whose production required less imports per dollar of output than is called for under existing patterns of demand. The "more or less" depends on the extent to which other constraints can be removed and on the elasticity of price- and income-demand for the good or bundle of goods to which the planned demand is directed.

What is implied is both a redirection of demand from luxury-type goods or equipment to make such goods (e. g. , automobiles or their assembly) to goods of mass consumption giving rise to a much lower propensity to import, and a net increase in the total demand, so that both processes take place at the same time. The policy questions, whether such a good or bundle actually exists that meets our requirements and whether additional demand can be directed towards it, become of crucial importance in the actual solution of the problem. Is there a good or bundle of goods whose production does not require a high import component but does call for heavy use of domestic labor, whose full potential expansion is blocked by institutional factors and internal financial considerations that could be overcome, whose production would raise the general standard of living both directly and indirectly through induced demands for all goods of mass consumption without encountering leakages that cannot be offset, and whose expansion would not require direct and detailed intervention in investment, hiring, buying and selling on the part of governments?

An expansion in agricultural production significant in terms of production and employment would immediately be checked by the inelastic demand for agricultural products, which would cause a drastic fall in prices and agricultural incomes. The same is true of other goods of mass consumption for which the current effective demand is already being met or is growing too slowly. Further possibilities of import substitution of consumers' goods are limited; import substitution in the production of producers' goods is limited by the small market; the distributive trades are overcrowded; the expansion of exports, except for petroleum and metals, encounters difficulties.

Housing

There is, however, one big field where the objections mentioned do not apply, or apply in much less degree. If one examines areas of possible large-scale non-agricultural employment where a "big push" — a critical minimum effort — to accelerate development and lessen the exchange constraint may be feasible, one is struck by the item of rent and housing. Not only is this a large item but the very peculiarity that has led economists to depreciate expenditures on housing — the high ratio of capital to output — proves to be an advantage when there is much potential slack or underutilized resources in the economy. Relatively large capital expenditures on housing have little effect on the level of the rents and the values of houses, especially if such expenditures and the successive expenditures they give rise to increase consumer income and the demand for better housing. Both the price elasticity and income elasticity factors appear to be favorable if effective demand can be raised by appropriate financing. However, the tremendous possibilities for housing in underdeveloped countries have been obscured by the focus of existing private demand for housing under prevailing financing arrangements in the limited area of luxury housing, supplemented by occasional government programs to build houses for the very poor whose effective demand must necessarily be small. The effective demand which should be expanded can be found in housing for the upper working and salaried groups if some means can be found to liquify their large investment in existing homes which in turn would provide down payments on new homes and apartments and at the same time, by the familiar filtering process, provide homes for the poorer groups.

The potential magnitude of this field may be grasped by noting that the American people [whose access to house financing was far more favorable than that in developing countries, see comment below] spent 26.7 percent of total personal consumption on rents, imputed rents, furniture and house operation in 1968. Expenditures on new houses amounted to 23.6 percent of total gross private domestic investment. In Colombia, by contrast, estimated expenditure on housing in 1967 was only 0.9 percent of the gross product. If everybody can get housing a little better than they now have, an enormous market can be opened up. No other item of consumption appears to offer such great effective demand possibilities if appropriate financing were to be made available. Concerning the maintenance of consumer demand, in any industry there are always substantial leakages away from consumption in retained corporate earnings and in the domestic and foreign consumption of executives and well-to-do shareholders. In the case of housing, it appears that not only would there be a demand for the houses if properly financed, but that most of the expenditure would go to small material suppliers and to wages disbursed in house construction, and these will be promptly spent on consumer goods (including rents).

In short, the potential demand is large, the import component is low, the overall labor component is high, the supply of domestic raw materials is elastic; if properly financed, increased saving is immediately forthcoming; the benefits can be widely dispersed through the filtering process and can continue for years; and the field is still largely competitive and non-unionized. Large-scale urban renovation, with accompanying housing, amenities and services, with the accompanying rise in demand for the other items in the workers' budget as new jobs are created, would appear to offer the underdeveloped countries the closest analogy to the unlimited demands of war in translating needs into effective demand. It provides the initial means of raising the effective demand for agricultural goods and thus provides both the necessary stimulus to mechanization and increased productivity and better jobs for redundant or low paid agricultural labor.

Since the increase in employment in construction and mass consumption goods industries would be so great, there would be no good reason for not utilizing some foreign exchange to import equipment for capital-intensive processes, if these were also highly physically- and value-productive, to break the successive bottlenecks that may be anticipated in such an expansion period in the construction materials, transport and mass consumer goods industries. If the institutional and financing problems can be resolved and the constraints become physical or technical, it may be found for example that the investment of a few millions more in cement-making capacity, brick or tile works, or glassmaking equipment may permit a multifold expansion in housing expenditures. Urban planning for higher densities with lower traffic, and for more rather than giant cities, would lessen capital requirements somewhat.

General Expansion?

The possibility of securing a substantial overall increase in output depends on the extent to which the degree of use and the goodness of use of domestic resources and imports can be raised. This in turn depends on whether there are key constraints that can be lessened or obstacles that can be removed, or whether the constraints and obstacles are so generalized that the lessening of, say, the exchange constraint is followed immediately by a savings constraint, or if any expansion in the non-agricultural sectors is immediately checked by overall inelastic agricultural supply. A full discussion of this point is not attempted here, but the nature of the answer may be indicated.

In the first place, it is apparent that if total output can be increased with existing resources, the output in which we are particularly interested — goods of mass consumption — can be increased much more since in general they require mostly domestic inputs in their production, and many of these may lend themselves to economies of scale.

Examples are food processing, beverages, tobacco, textiles, shoes and building materials.

Secondly, there is evidence that because of labor codes, monopoly, inertia and custom, small markets, frequent holidays and other reasons, much capital equipment in underdeveloped countries is functioning for only a small percentage of the hours of the year or is being operated far below capacity if capacity is set, say, at 80 percent of the hours of the year. Excess capacity extends also to the infrastructure of power plants (in the possibility of raising the load factor), roads and railroads in many countries. There is, in other words, great potential slack that could be taken up if conditions in certain respects like those of wartime could be created.

Thirdly, the underutilized capacity is even greater in the case of manpower, especially in agriculture. The productivity of the sector is very low precisely because it does not pay to use more costly techniques even when these may be more productive in physical terms but not, at present, in value terms. The same general observation applies to casual labor in small towns and large cities and to labor in much of transport and distribution. On the elasticity of supply in agricultural production, my confidence in its potential is probably influenced by the fact that despite a doubling of the population of Colombia from 1950 to 1970, with only a low rate of growth in rural areas, agricultural production increased so much that the terms of trade actually worsened for agriculture, while agricultural exports increased, and agricultural imports were displaced by domestic production. Another consideration suggesting that inelasticity of supply in agricultural production would not be a barrier, at least in some countries, is offered by evidence of enormous gaps between the commercial farming yields and the national averages.

It is now claimed that these conditions exist in all underdeveloped countries or to an equal degree. There are doubtless some in which the human and natural resources are so poor that not much growth in output could reasonably be expected under any conditions. In others, entrepreneurial and other skills may prove to be a serious constraint. This does not appear to be the case in most Latin American countries. However, in those that already have some industrial base, entrepreneurial and professional abilities, and modest foreign exchange and underutilized natural resources, a substantial increase in output could occur if the underutilized factory and manpower capacity could be used, and a still greater expansion if it could be utilized more fully in the production of articles of mass consumption.

The use of the terms "underutilization" and "slack" imply unfulfilled needs that might be met with existing resources, but not inadequate demand in a Keynesian sense. This is clearly shown by the existence of chronic inflation (excessive monetary demand) in most of the

countries where the conditions described here are found. The source of the inadequacy must be sought elsewhere — in institutional barriers, inappropriate policies and unfavorable political, cultural or social environments. Operation on these barriers, policies and environments must play an important role in achieving higher and better utilization of resources in underdeveloped countries. The use of foreign exchange resources, to be properly effective, must be part of a comprehensive and integrated program of development. It is unrealistic to postulate investment criteria for exchange resources without reference to an overall policy for use of all resources. The combination of both sets of measures — good foreign exchange investment criteria (as defined here) and effective measures to induce the better utilization of internal resources — should result in most cases in very marked rises in output and consumption.

This is not the place to attempt to work out the nature of the institutional and financial changes that would be necessary as supporting policies, which in any case should properly be done country by country. The argument of this paper would be satisfied by establishing the possibility of applying a new criterion to the allocation of exchange — a criterion that might be called bottleneck-breaking in mass consumption industries. By allocating more exchange for such purposes (and less to components for automobiles etc.) in conjunction with a redirection of demand towards goods of mass consumption including housing, highly productive techniques and large additional and more remunerative employment and a rise in the living standards of the poorest could, at least theoretically, be secured simultaneously. Considering imports as a factor of production, it could be said that factor proportions could be changed to secure greater output and employment in the economy as a whole, since the large expansion in mass consumer goods industries contemplated would necessitate far less imports than would an upward projection of present trends of demand with the probable more rapid growth in the consumption of the well-to-do, and with continued factor underutilization.

Some Objections Considered

Many writers, following Nurkse, have found the chief developmental constraint in adequate internal capital formation, and would doubtless object to the proposal being offered here that it seems to envisage large growth in output without the requisite volume of savings and investment. This view rests on what appears to be a mistaken identity of saving out of present low incomes as the outer limit, not taking into account the increased saving that could be channelled into investment out of much higher and rising income, where much of the saving by producers is really derived from consumers and is concealed in the price of goods, rents or monthly payments on housing. Actually, properly financed housing would appear to satisfy the requirement of a high marginal saving rate without calling for a decline in current consumption.

To the objection that such an induced change in the percentage composition of consumption and increase in the total is arbitrary and flouts the market system as expressed in current consumer demand, it may be pointed out that there is nothing sacred in a pattern and aggregate of consumption resulting from a highly skewed distribution of income and from a variety of institutional constraints and — if another value-charged word may be permitted — distortions. The pattern envisaged is both rational and ethically defensible inasmuch as it places emphasis on the provision of goods of mass consumption that enter prominently in the cost-of-living basket.

[Excerpted from "The Exchange Constraint on Development — A Partial Solution to the Problem," The Economic Journal. London: The Royal Economic Society, Vol. 81, No. 324, December 1971, pp. 886-900.]

COMMENT: AN EDITORIAL OPINION

Dr. Currie's proposals described in this article appeared to have sufficient interest and unique elements to merit some commentary on a few points which this editor has not seen discussed in other publications. Currie's views on a number of issues related to his proposals, along with an elaboration of how these might be carried out in Colombia, are found in far more detail though with a slightly different emphasis in his earlier book, Accelerating Development (New York, London, Sydney, Toronto: McGraw-Hill Book Co., 1966).

In assessing the Currie program and its emphasis on housing as a vehicle for shifting demand in desired directions, one must consider which countries are facing the kind of problem he wants to solve. Conditions generally similar to those in Colombia, where Currie developed his ideas, are found in some but not all Latin American countries, to a lesser degree in a few Asian ones, but hardly anywhere in Africa. Some of the things that could go wrong with his remedy can be inferred from his assumptions. For example, modern industry is assumed to be fairly well developed but for a limited domestic market, and it works under a restrictive labor code and faces strong trade unions, leading to high wages for a small group, excess capacity, etc. But he assumes that housing is non-unionized, competitive, outside the labor code, and that these conditions will continue after his housing program gets started — i. e., workers willing and able to build houses will come forward in large numbers for low wages; also, building materials will be plentiful. So, if labor skill or material shortages arise, if monopolistic unions and/or firms move in, or if restrictive building or labor codes intervene, then houses may not be built very fast and leakages can

occur. As for the desired stimulus to other mass-consumption goods, there are countries where one might have less than Currie's faith in the rapid growth potential of agriculture, or in the scope for large increases in output by mobilizing idle capacity in textile and other factories. No doubt many of these bottlenecks could be overcome in time, given the will to do so, but they could seriously slow a build-up of the kind of production momentum that Currie wants for his "big push" approach. Another objection to an emphasis on housing is that, by concentrating benefits in an upper middle income group and in urban employment, it could aggravate the skewness of income distribution in predominantly rural countries, in the short run at least.

Gustav Ranis has published a critique of Currie's article in the March, 1973 issue of the Economic Journal, (p. 203), to which Currie replies (p. 207). Ranis points to the probability of inflationary consequences from a "big push" in the expenditures on housing in conjunction with short run inelasticities in the supply of consumer goods such as food and textiles. He is less sanguine than Currie regarding the capabilities for rapid increases in output of such products, noting that excess capacity in factories and excess manpower on farms are no guarantee that other complementary factors will not create supply bottlenecks. He suggests that increases in spending on urban housing may lead to an increased rural immigration to towns that could equal the additional urban employment they create. Ranis also objects that Currie "down grades the now increasingly conventional wisdom that agricultural advance and the growth of labor-intensive, export-oriented industries may provide a possible and more reliable 'way out' for the labor surplus developing economy." He accepts Currie's idea of shifting domestic demand in a less import-intensive direction (Ranis also mentions labor intensity), but he indicates that other products may do this as well as housing, and can produce exports which housing cannot; he also questions the income elasticity of demand for housing. Currie's brief reply stresses that housing can come into production quickly and is less subject to inelastic demand than other mass consumption goods, especially food. In attempting to shift demand composition, any increased demand may become inflationary; but housing expansion is associated with a high marginal saving rate (unlike alternatives). He states that there is nothing to prevent a stimulation of exports along with the stimulus to housing.

Ranis' views appear to be consistent with the ILO proposals for development strategy in Colombia (see Development Digest, January 1971, p. 114, and January 1972, p. 94), which lay considerable stress on labor intensity in the attempt to reduce unemployment. Currie specifically rejects this approach. Currie's proposals would appear to have easier political acceptability than the demanding requirements of the ILO program, in part, perhaps, because they seem to offer quite a bit at relatively less sacrifice.

In this editor's opinion, Currie has not produced a formula that can avoid all the hard problems addressed by the ILO team in their program to shift income distribution and the composition of domestic demand in desired directions (although his desired shifts differ from theirs, along with his faster timing). But he has opened up a new area for discussion, i. e. the question of what may be the potential of housing as an engine of growth. The possibilities are not fully spelled out in the article above, and we may turn to Currie's suggestions for opening a new housing market as described in his 1966 book. Very briefly, he proposes to stimulate the demand for home ownership by means of mortgage loans on the following terms (pp. 218-219): only 10-15 percent down payment required; amortization over 15 years; amortization and interest payments adjusted to changes in the cost of living. All these items are very different from prevailing terms in developing countries; the last would bring out new lenders, and the first two could create many new borrowers. In addition, new savings can be created among house buyers under these terms, who would find a previously non-existent motivation for such investment (Currie argues for treating houses as investment rather than consumption); and new savings should also be generated among would-be lenders on these terms. By relying on private mortgage contracts rather than government spending, this program reduces the danger of overinflating the means of payment without productive performance. Currie also describes a number of auxiliary measures to get this housing program into motion: government support to a national institution for insuring and facilitating mortgage loans by private lenders under specified conditions; tax incentives to develop idle land; construction loans; apprenticeships for workers; urban planning; etc.

Can this method of house financing actually open up a new and enduring market? And new and enduring saving incentives? Currie does not limit his program to housing, but that seems to be its most novel and distinctive feature. It is conceivable that he has focused on an economic innovation which may have special virtues as a behavioral change agent. The government of Colombia has recently embarked on a new development plan in which Currie's thinking has been influential. It is too early to foresee the response to the new methods of house financing that are being offered in Colombia, but the results of this program will be well worth study and analysis as they develop in practice.

The Editor,
Development Digest

COMMUNICATIONS IN TECHNICAL ASSISTANCE



NIGERIAN TEACHERS IN IBADAN PREPARING
VISUAL AIDS WITH THE ASSISTANCE OF A
MEMBER OF THE UNIVERSITY OF INDIANA
CONTRACT GROUP. [PHOTO: U.S. AGENCY
FOR INTERNATIONAL DEVELOPMENT, NIGERIA]

A Conspiracy of Courtesy

Joseph Ascroft

[Courtesy requires that honored guests in African countries not be criticized; the result is a lack of communication between technical assistance personnel and local nationals that can seriously hamper development projects.]

I have just completed a special mission to Africa to visit a particular country. My assignment was to look into the need for setting up rural communications training workshops for rural development workers. The unusual nature of my status — a "local boy" turned international consultant — brought an uncommon twist to my findings.

Initially, I used the typical, rather uninspired approach of examining existing training facilities, curricula and programs, looking for the shortcomings and gaps which at least in theory were deserving of workshop attention. This approach did not pay off very well, principally because the many nationals I talked with, including the rank and file of government, had a more compelling story to tell. Let me illustrate with this brief episode recounted to me by a high-ranking civil servant commenting about a development project that seemed to be fairly well esteemed in the country:

Six FAO experts showed up with a project already worked out in Rome. They came to create a community of horticulturists to supply the nearby towns. They negotiated with the chief in the area, thinking they were talking to the people. He gave them land and helped them with recruitment by giving them not his first-class farm families but the chronically shiftless hard cases

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he wanted to get rid of. Additionally, the project was only half filled with farmers and these were mostly commuters whose permanent homes were elsewhere. But these experts didn't know this. They thought they were succeeding in establishing a permanent residential community here. If the experts were to leave today, the project and its community would die tomorrow. And what was being said about the project by the local people? "Agricultural economists! What do they know about transplanting people, about community development, about our customs and traditions? Just look, they say this is a permanent community, but there is no cemetery here!"

This was the point. Indeed there was no cemetery, nor had any been contemplated or even imagined to be necessary. Yet we all know that, in these parts, there can be no permanent home for the living unless there is also a permanent home for the dead. It seems so simple and reasonable a requirement. Yet, incredibly, development projects, so fastidiously detailed in technical planning, fail utterly to have any means of guarding against such fundamental oversights. And still, we consistently overlook the need to tell the experts about their shortcomings.

I say "we" even though I, too, am an FAO expert on a short-term assignment. But my own homeland neighbors this country and shares much in common with it, including language. To a large extent, therefore, I know and appreciate many of the local customs and traditions. And this was the twist. It turned out that my respondents, especially the nationals, were far more eager to talk to me about what goes on in the field than about what goes on in the classroom, and about the failures in rural development projects past, present and proposed.

This can be rather traumatic for an academician, but the nationals had a point which could not be denied expression. Sometimes individually, sometimes in groups, the nationals talked vehemently and indignantly about present field practices which precondition project failure. They seemed, without premeditation, to be seizing an opportunity to place on some authoritative record their opinions and suggestions of what ought to be going on in the field to increase the chances of project success. My local-boy-turned-international-consultant status provided them with the opportunity. They used it with a passion. It was so rare an event that no one could recall its precedent. Given my occidental name and my somewhat esoteric area of expertise — communications — no one expected an African to show up.

Silent treatment. It was interesting the way my unmasking occurred. The interview, especially with nationals, would begin in a formal way. Then several minutes into the interview, I would reveal my nationality and a dramatic change would take place, from deferential formality to confidential familiarity. The viewpoint expressed to me before my identity became known seldom corresponded with what followed. For

instance, the individual who made the indignant remarks contained in the episode recounted earlier began by praising the project. It was as though he had two mutually inconsistent viewpoints, one reserved for aliens and the other for allies and, by some circumstantial peculiarity, I was getting both treatments.

To understand what was happening, one must realize that alien technical assistance personnel are treated like honored house guests in African countries. The local customs dictate that one does not criticize one's house guest to his face, nor does one tell tales to some of one's guests about one's other guests. It is up to the guest himself to know he is violating expectations when he is exceeding the bounds of good taste, judgment or behavior. But if the guest is an alien he may never know, without being told to his face, what these violations and excesses are, or when he is committing any of them. The result is a seemingly unsolvable problem where one party doesn't know and the other dare not tell.

By way of example, there was, at the time of my visit, a major development project being planned. Its aim was to intensify rural development by dividing the country into zones and concentrating government service and investment resources in a few of them at a time instead of spreading the same resources too thinly and thus ineffectually across the whole country. The project, suggested by the president of the country, met, in principle, with widespread approval. Yet I was unable to find a single national who was happy with the way it was developing. Even its home-grown chairman was privately skeptical and filled with pessimistic foreboding about its chances. For the most part, seasoned rural development workers, grown adept through experience at reading the signs of doom, were forecasting outright failure. Yet no one was raising a voice in meaningful dissent. The project, apparently, was being allowed to grow and gather momentum unimpeded by any realistic intervention from even those local officials who, in private, protested most strongly that it was heading inexorably toward disaster.

The problem, of course, is that the project had been adopted by eager-to-help, well-intentioned international agencies and bilateral aid donors. And financing from them requires a plan of operations which they apparently believe only their own agents are capable of constructing. So part of the aid comes in the form of technical assistance personnel. These technical experts usually take to development projects with missionary zeal, systematizing, organizing, rationalizing and even proselytizing with commendable energy and enthusiasm.

At first, the technical experts' attentions are welcome because they have more time to devote to the project than the local officials who are endlessly plagued by ongoing duties of other kinds. Thus, the experts

are allowed to take the project into a sort of protective custody. But it doesn't stop there. The experts quietly annex de facto leadership and control and gradually the project begins to develop and be directed almost entirely from within the ranks of the experts. Soon a bulging document of formidable technicality is ready. This is the vaunted plan of operations which proposes a complex framework for undertaking integrated rural development on an intensified scale. It also places the project beyond the intellectual grasp of the majority of the local officials. Out of touch now with developments in the project and unable to match the verbal wizardry of the project's new technocratic leaders, the local originators of the project suddenly find themselves powerless even to infiltrate practical ideas and suggestions into the now official plan.

Local capabilities wasted. The locals have many practical ideas and suggestions, especially with regard to project implementation, i. e., field operations. They argue that the technical assistance personnel, while admittedly experts in their substantive areas, frequently turn out to be grossly inexperienced amateurs in the actual on-the-job practice of rural development. Most of them bring with them either only book knowledge or field experience gained in noncomparable situations. Furthermore, many of the experts approach rural development in the spirit of well-meaning pioneers embarking for the first time upon an exploration of an as yet uncharted domain. Thus, they ignore the lessons learnt from previous explorations, even those of their most immediate predecessors. The lessons they fail to learn include particularly the dangers of impatience wherein experts with short-term contracts cannot spare the time to plant and nurture an acorn to produce a sturdy oak. Instead, they try to transplant the full-grown tree, spending the rest of their time frantically shoring and propping it up until they leave, after which it collapses for lack of support.

A striking example of this proclivity toward short-term projects concerns an impressive network of radio farm forums assembled by an international expert whose contract terminated the month before I arrived. When I got there, I learnt that since he left the network was already in rapid decline. Half of the forums in some areas had ceased to function. In terms of leadership and control, it had been a one-man show; when that man left, the show folded.

Experts have technical skills and planning know-how which local officials may not have. This is one blade of the scissors. But the same experts seem to lack the practical field experience, the operational know-how, the communicative skills and long-term continuity that the local officials can claim to have. And this is the other blade of the scissors. Many of the locals are indeed veterans of former projects directed by widely varied assemblages of international experts. They believe themselves to be the experts, not so much in designing and preparing projects but

in implementing them. Among the older hands, when they talk about the subject, there is never any shortage of highly plausible and feasible ideas. But the foreign experts seem to regard local offerings as quaint, simplistic inconsequentialities. The local is reduced to the status of a bystander observing the antics of the technical experts, wondering no doubt when his international partner is going to learn the value of a two-bladed scissors. In the meantime, locals suffer their frustration silently, prisoners of their own outdated customs denying themselves, at their own expense, the right to discipline their house guests in a firm, no-nonsense way.

The young teach the old. Yet, foreign experts do not generally look upon this shortcoming as serious. The reason, say the more seasoned officials, is that foreigners tend to rely heavily on the more youthful, better trained and educated nationals, not only because they have more in common with them in terms of level of sophistication and general outlook but also because today's youth is not so dogmatically bound by tradition and, hence, not squeamish about riding roughshod over a few customs to save time when the need arises. This reliance upon an increasingly elite youth to serve as extension linkages between project designers and the rural folk themselves accounts, in the eyes of many Africans I have talked with, for the high rate of project failure in Africa.

It is only in the past decade or so that much of Africa has become independent. It is even more recently that the emphasis has switched increasingly to rural development. Until now, there has been no steady pressure on rural folk to radicalize their styles of farming, nutrition and hygiene. This burden has fallen upon the present owners and farmers of land. Whatever new ways of living they decide to adopt will automatically become the ways by which future generations will have to abide. The problem, however, is that the person who needs to be convinced now, the one who must decide on behalf of his family and farm, is not the rural youth but the more traditional, difficult-to-change rural elders.

It has, however, long been the custom in Africa that the old are the teachers of the young in all the ways of life: in farming, building houses, preparing food, marrying, having children and raising families in the venerated tradition of generations before them. Now this tradition has been shattered. The elders of today, who once sat and learned at the feet of their fathers, find themselves still sitting and learning, only now at the feet of their own children. Worse, these children are openly discrediting, ridiculing and making a mockery of tradition. How can they expect their parents to swallow this bitter pill without resistance?

None of the training institutions I visited seems to have taken any special pains to study this problem, perhaps because institutional staffs are largely expatriate and hence, ignorant of its importance. Therefore, none of the young men and women interested in teaching new ways

of living to their elders has been especially equipped with communication strategies to handle so delicate and loaded a situation with tact, good taste and, above all, with professionalism. It is disheartening to visit a farmer training center and observe an authoritarian youth arrogantly berating his elders in a manner reminiscent of colonial times. It is apparent he has not been taught how to teach adults. Instead, he relies upon the only models of teaching he has in his experience, namely, his own teachers. But he forgets in the process that when he was being trained his teachers were, in fact, his elders. So, without premeditation, this young man makes himself thoroughly obnoxious to his elders by treating them like his subordinates.

In a nutshell, there is an unintended conspiracy of courtesy on the part of local nationals preventing crucial communication between them and alien experts from occurring freely. On another plane, there is an equally unintended manifestation of discourtesy on the part of the young nullifying crucial communication between them and their rural elders. Together these negative elements act to frustrate the best laid plans.

Tact and humility. I found these arguments to be so compelling that I spent my assignment listening to them being repeated by different people in different walks of life and in different circumstances and with different emphases and examples. Consequently, I have been led to change my whole approach on this assignment from a basically theoretical consideration of what is missing in existing project curricula, facilities and equipment to an essentially pragmatic concern for what is missing in the existing practice of rural development.

It would seem, on the surface, that what is needed is: (a) to get an honest dialogue going between alien technical experts and local experienced officials, and (b) to infuse at least some tact and humility into the communication approaches of the young change agents so that they can work more effectively with their elders. However, to the professional specialist in communication, there is nothing simple about training people to question their own deep-seated beliefs and values, let alone training others to train still others to question and give up the customs and traditions of generations gone by. Not a simple problem perhaps, but certainly not an insoluble one. The techniques and technologies of the professional communicator for handling these problems are considerably more developed than is widely supposed to be the case in developing countries.

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Technical Assistance Methodology: An Anthropologist's View

George M. Foster

[To understand technical assistance methodology, we must focus attention on three groups: the sponsoring, or innovating organization, with its administrators and planners and support people; the technical specialists who execute projects; and the client, or target group, toward whom a program of change is directed. To achieve the most effective technical assistance, each of the three groups must be understood in its social, cultural, and psychological dimensions.]

Historically, three major assumptions have underlain the delivery of technical assistance. These assumptions, presented in sequence with the rationales that support them, are the following:

1.) Development requires the transfer of existing and effective practices from the technologically advanced nations to the developing nations. When planners and technicians first became interested in utilizing the science and techniques developed in Western countries to ameliorate health, agricultural, educational and other problems in less developed countries, they operated on two simple assumptions. First, the best and most advanced techniques are absolutes which work equally effectively in all sociocultural and economic settings. Smallpox vaccination, for example, was seen as a universal model for the transfer of techniques, for here is a medical technique that works regardless of culture. Second, the people in developing countries will immediately perceive the advantage of the new methods, and will adopt them with little or no urging. This philosophy underlay the early work of the Rockefeller Foundation in its attempts to eradicate hookworm in Ceylon, 1916-1922, and also characterized much of the work of the Institute of Inter-American Affairs in Latin America,

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beginning in 1942. Even today, traces of this philosophy can be observed in technical assistance programs.

2.) Effective use of technical assistance requires recognition of the sociocultural elements in the transfer of techniques, and analysis of the culture of the recipient group so that innovation can be presented in attractive form. The initial ethnocentric view of technical assistance has begun to give way since about 1950 to a more sophisticated view, in which it was recognized that most technological and social development involves people, and that people have cultures and values that strongly influence them in their decisions to accept or reject new ideas. According to this view, the major problems in technological development are imbedded in the society and culture of the recipient community itself. Target groups, it is assumed, are anxious to improve their standards of living and to modify their behavior under the right circumstances. But cultural, social, and psychological barriers inhibit these changes. Hence, if these barriers can be identified through community analysis, and if change motivations can be uncovered, then projects can be presented in such fashion that target peoples will eagerly support them. This effort to know the culture of the target group represented a major step forward, and it is a basic part of the most successful technical assistance programs. But only now are we beginning to learn that it is not enough.

3.) Major barriers to technical assistance transfers are also found in the nature and structure of the innovating (aid-giving) organizations, and in the culture and psychology of the people who staff them. As sophistication in identifying directed culture-change problems has grown, it is becoming apparent that knowledge of the "culture" of the innovating bureaucracy is also important. Just as barriers to change are found in cultural forms of recipient groups, so are they found in the structure and values and standard operating procedures of bureaucracies charged with change, and in the role relationships and personal qualities of the administrators and change agents. A well-established bureaucracy may be more resistant to change than a traditional agricultural village.

Cultural Premises

In order to understand how barriers in client groups and bureaucracies inhibit change, and the ways in which these barriers can be attacked, it will be helpful to digress for a moment to consider two anthropological concepts. The first — that sociocultural systems are logically integrated wholes — has to do with the basic structural characteristics of stable cultures and societies. The second — that there are implicit premises underlying behavior — has to do with the collective cognition and learning of the members of a society which seems to determine their behavior.

Cultures are integrated. A stable culture is a logically integrated, functional whole, a system in which all parts fit together and have meaning. If the analogy is not carried too far, a culture may be compared to a biological system, or to an ecological system, in which each element fulfills a definite function in relation to all the others. And, like biological and ecological systems, cultural systems are in delicate balance, and at the same time constantly changing. The implications for technical assistance are twofold. On the one hand, the structure of culture allows, or provides for, change; that is, any specific culture will show greater or lesser hospitality to innovations, for it is not frozen in an unchanging mold. But, change cannot occur piece by piece, or project by project. Any change in one institution produces secondary and tertiary changes in others, of a nature and extent that often cannot be foreseen.

It is possible that more technical assistance efforts have failed, or have not been entirely successful, because planners and professionals have not been fully aware of the implications of the integrated nature of culture, and the dynamic imperatives of change, than for any other reason. Failure may range all the way from simple resistances to particular practices on the part of client peoples, to an opposition to grandiose schemes in which entire economies may be jeopardized. In 1965 in Nepal I encountered a project in which a Japanese rice and associated cultivation techniques had demonstrably increased yields up to two hundred percent, a considerable source of gratification to an agricultural specialist. But Nepalese villagers showed little interest because the rice grains clung so tightly to the stalk that a special threshing machine had to be purchased; and the rice grew on a dwarf stalk that provided much less animal fodder than the indigenous rice. Since animal fodder is a major byproduct of rice cultivation, the new rice produced a shortage of animal feed. For these two reasons, most villagers were uninterested in the new rice, which was an unqualified "technological" success.

Cultures are based on implicit premises. The second point I wish to stress is what may be called the implicit premises, or the subconscious assumptions, that underlie the cultural forms and individual behavior of the members of a group. All members of a group — a Mexican village, an American public health bureaucracy, an entire nation — share a series of common learned or cognitive orientations, a comprehension and interpretation of the world around them which set the terms and conditions on which they feel life is lived. I say "series" of cognitive orientations, because in societies of any degree of complexity, levels or planes of integration are involved. Traditional Eskimos, perhaps, can be thought of as sharing a single cognition, although even here I am not absolutely sure. But it is clear that in a country such as the United States or Mexico there are a number of levels of cognition, including a national level, another based on

socioeconomic and/or ethnic affiliation, and others generic to bureaucracy, and to the disciplines and professions.

Some aspects of these common cognitions are fairly explicit, in that they are found at an overt, conscious level where they can be verbalized by thoughtful members of the group concerned. Others are covert and subconscious, representing assumptions and postulates so deeply imbedded in the individual's mind that normally he or she is not aware of them.

Both individual behavior and cultural forms and institutions can be thought of as a function of or as a response to the shared premises — and particularly the implicit premises — of the members of a society. They condition attitudes about interpersonal relations, about roles and status, about goals in life. They determine how people relate to their economic systems, and how they view work and its rewards. Cultural premises underlie feelings about religion and the supernatural, they determine philosophies of life, they set logic, and they express basic values. If we know the premises that underlie a culture, or a subculture such as a bureaucracy, we have something firm to which to tie our analyses of behavior. In peasant conservatism, for example, we see not just an exasperating trait, from the standpoint of the technical specialist, but an entirely rational attitude, given the peasant's view of his world.

It is important to remember that the premises determining behavior may be soundly or unsoundly based, accurate or inaccurate perceptions of reality. It is not their truth or falseness that gives them force, but rather what people believe or feel to be true. Many of the developmental problems facing the world today are due to the fact that target group premises that had a great deal of validity at one time are today outdated, no longer fitting reality. Yet the behavior engendered at an earlier date lingers on, discouraging innovation and encouraging villagers to cling to customs that worked well in the past. And this is not true solely of villagers, for in every bureaucracy outmoded premises linger on, hampering efficient operations. And beyond bureaucracy, outmoded assumptions about our entire social and economic systems, and the world in which we live, likewise hamper technical assistance programs.

A most important task of the anthropologist who is working as a technical specialist is to determine the premises that underlie the behavior of all of the groups that are involved in a program or project. A major problem has to do with methodology for discovering premises. Unfortunately, there is no simple way. The first step is to recognize what is meant by implicit premises. The second is to be aware of the kinds of premises that have already been uncovered. The third is to ask the question of each identifiable form of behavior, "What is the premise that might logically underlie this act?"

The innovating bureaucracies. The need for cultural and social analyses of client groups is widely recognized, and at least lip service is customarily paid to the principle. By now many technical assistance planners and technicians have absorbed a good deal of the philosophy of learning about the people one hopes to help, and incorporating this knowledge in planning and operations. The same cannot be said of the necessity for having an equal understanding of the innovating organization and its personnel. It has occurred to relatively few planners, administrators, and professional specialists that they should be studied, as individuals and as members of professions and bureaucracies, in the same way we study client groups, so that they will have understanding of themselves, their resistances, their motivations, their goals.

To illustrate, bureaucratic premises include the belief that an administrative organization must grow continually if it is to remain healthy; that "outsiders" cannot understand what goes on within a bureaucracy; and that standard operating procedure is based on accumulated wisdom. In addition, there are professional premises specific to the fields from which technical specialists are drawn. Agricultural specialists assume their goal must be the maximum yield with the minimum number of hands; medical personnel assume that human life is sacred and must be preserved as long as possible, whatever the cost in money or personal suffering; community developers often assume that "it's not what is done but how it's done" that is important; and educators assume literacy must underlie any fundamental changes in society. All of these assumptions are culture bound, and the blind attempt to follow their dictates in all situations leads to untold frustration and waste.

With respect to planning, and to the specific methodologies that are selected to implement technical assistance, we need to see how premises that are largely recognized intervene in massive form. One example, the operation of the "pastoral ideal" will serve to illustrate this point. Since time immemorial many Westerners have believed that rural life is marked by especially noble and praiseworthy qualities, that it encapsulates the fundamental virtues of society; thereby standing in opposition to the city, with its impersonality, its social disorganization, its anomie, its crime and vices. Since classical times urban moralists and intellectuals — who usually were not faced with the grubby reality of earning a living in a peasant village — have deplored the real and imaginary vices of city life, and have searched for a lost Utopia in the "natural" and unspoiled ways of the traditional rural community. This pastoral ideal has been implicit in American agricultural policy, with debatable economic and social consequences. Even today there lurks in the mind of many Americans the assumption that the single family farm must be maintained at all costs, since it is essential to a democratic system of government.

Perhaps a majority of American technicians who have worked in agricultural extension and village development have been imbued with the notion of rural superiority. Many have been farm-born, or are the products of small town life, and they have been only too happy to accept the premise as conferring merit upon their backgrounds and views. To this day community development theory is based on the assumption that villagers are by nature cooperative, and that this co-operation can be tapped through the right methodology. In fact, it is abundantly clear that this idealized interpretation of village cooperativeness is erroneous, and we now understand why programs based on such a premise have so often failed.

The technical specialist. Technical specialists are complex beings. They share premises and values, usually in their middle-class variants, with fellow citizens of their own countries. They have been enculturated both into a profession and into a bureaucracy, and they usually accept the accompanying premises and values. Most technical specialists would be astonished and angered to believe that their national, professional, bureaucratic, and personal characteristics constitute major barriers to successful technical assistance. Yet this, unfortunately, can be the case. We find particular problems both in their views of professional roles, and in their needs for ego-gratification.

To a greater or lesser extent all professionals are ethnocentric, in that they tend to see their work and their goals, and the needs of their clients and of society in general, from narrowly professional points of view. Professional specialists in technologically advanced countries are trained to live and work in their own societies. The "problems" they have been trained to work on are almost without exception defined in terms of these countries. There is little need to teach the average professional student to think first of identifying major problems, and then of working out solutions: the problems are assumed to be obvious and the need is to ameliorate, not identify, them. Thus, professionals know the kinds of questions their society will ask and the job demands it will make upon them.

Program orientation produces grave problems when the task is to begin with seeing the problems and, using very different conditions and resources than exist in advanced countries, to try to work out procedures that will be a function of the local situation. American technicians run the danger of assuming that their sophisticated approaches are universals, and that their task is successfully to transplant their programs to host countries. The corollary to this assumption is that the best technical expert is the person who most perfectly transplants an American-style program to another program.

Another less common type of specialist-centered problem, is the attempt to produce the perfect project. As technicians, whatever our

specialty, we usually are proud of our ability, the high standards and levels of competence to which we have been trained, and we are anxious to do the best possible job and have the performance recognized by our colleagues. Most of us at home are limited by economic, political, and budgetary realities. The architect usually must settle for a less costly structure than "the best" he can design; medical doctors rarely have all of the equipment and supporting staff and facilities needed for perfection in practice. But an overseas assignment may be seen as an opportunity to execute a project with a degree of skill and excellence that cannot be achieved at home. At least in the early days of technical assistance, when decisions were made to build dams or equip hospitals, the host country nationals relied on the specialists who sometimes were only too happy to assure them that elaborate, costly and complex designs were appropriate to the needs of their countries. Overdesign, overly-sophisticated projects, and ill-conceived programs sometimes resulted.

Still another specialist-centered problem, stemming from a combination of professional pride and bureaucratic loyalty and competition, must be noted. Competent professionals recognize that technological development is a complex process that involves diverse contributions. At the same time, it is very difficult for a professional not to feel that his contributions are the key to overall success. Public health people genuinely feel that if a reasonable level of health can be achieved, people will have the energy and will to farm more efficiently, to work harder, and to enjoy their leisure. Agricultural specialists are convinced that if only the "green revolution" can be brought about people will achieve the nourishment that underlies all health, and have crop surpluses for sale that will provide money for other demands not now met. Unfortunately, this professional compartmentalization tends to be exported along with professional knowledge. When professional pride is combined with professional jealousy, in the form of competition for extra funds and favored status, the joint planning and operations that produce the most successful programs are difficult to achieve. Sometimes, it seems, infighting and jockeying for position by the members of the several divisions of a major technical assistance mission constitute the worst of all barriers to success.

Technical specialists are not only bearers of the premises and values of their national cultures, of their professional subcultures, and of their innovating bureaucracies, but they are also psychological entities, with psychic needs. And the way in which these needs are expressed will have a great deal to do with their effectiveness as specialists. Most, probably all of us who feel we are competent specialists, crave recognition for our ability and performance, although we may be embarrassed to admit it. We knowingly and unknowingly manipulate a series of symbols in order to maximize the

likelihood that this recognition from superiors, colleagues, and perhaps the public at large, will be forthcoming. But what is good role performance, and how is it demonstrated? It is not something that exists within an individual without reference to others; it is something that can be measured only in relation to other people.

The people who receive technical assistance have power over the professionals who work with and for them, since they have the power to grant or withhold the evidence of ability which is so important to the professional. But it is often difficult for technicians to recognize these psychological dynamics of the situations in which they work. Generally they see themselves in a missionary role to a far greater degree than colleagues who have remained at home: without this sense of mission, they would not have opted to live under conditions of hardship for long periods, where accomplishment of even modest goals seems so difficult. Technical specialists in overseas assignments tend to see themselves as devoted to the people with whom they are working, as selfless, dedicated, desiring only a modicum of "gratefulness" as reward from the people they serve. (There is, of course, a certain amount of self-deceit in this position.)

When specialists from one culture work with clients in a second culture, which at best they only partially understand, the client's response will come more slowly than in the specialist's own culture. Client peoples, not surprisingly, are suspicious of outsiders who come offering so much, whose behavior is different from that of other "superiors" they have known. Moreover, the specialists' goals and techniques may be far from realistic in the foreign setting, and they may have less to offer than they imagine. When the client response is slow in appearing, the specialists feel threatened and perhaps sense their inadequacies. But, being human, it is difficult for them not to project these feelings onto the client group, to brand its members as ungrateful, or apathetic, or uninterested. All of us have known professionally competent specialists who, for reasons like these, have been failures.

Conclusion. It is important to continue our efforts better to understand the structure, the dynamic forces, the values, and the premises of client groups. But it is also important to recognize that the next major step in perfecting a technical assistance methodology is to direct attention to the innovating foreign bureaucracy, and to its personnel, to its premises and to its rationale. Intensive anthropological, sociological, and psychological analysis of the nature and structure of such bureaucracies and technicians will produce a much greater understanding of the dynamics of the change process, and of the means to achieve greater success.

[Excerpted from "An Anthropologist's View of Technical Assistance Methodology," an unpublished paper prepared for a seminar on methodology sponsored by the U. S. Agency for International Development, Spring 1972.]

Culture Simulation as a Training Tool

Melvin Schnapper

[An experimental approach to training gives prospective overseas personnel the capacity to "learn how to learn" and thus to function more effectively in a different cultural setting. This article describes the approach taken by the Canadian International Development Agency (CIDA) in providing sound preparation for its international operations personnel.]

Until recently, Canadians could pride themselves on their "most desired expatriate" status in many Third World countries. However, as time passed and their number grew, evidence appeared that Canadians also can be an "ugly" presence abroad. CIDA therefore set up a Briefing Center to prepare Canadians going abroad as teachers and technical advisors. After a year of operations, however, the staff felt that the lectures, discussions, and brief role-playing were having little effect on the attitudes and behavior of the trainees.

One basic belief of the Center's staff was that if training was to go beyond the "nuts and bolts" preparation that had been the traditional focus, the training situation would have to confront participants with their own beliefs, assumptions, and attitudes, and give them the opportunity to examine the appropriateness of these values in new cultural situations. In addition, the staff wanted a training program that would encourage and support experimentation with new and adaptive behaviors. They were looking for a "participative" or "experiential" approach in which the training situation itself would be the beginning of an intercultural adaptation process. In other words, during training the trainee would be acquiring "learning how to learn" skills that he or she would continue to use once sent overseas.

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In almost every training situation, the crucial problem is how to divide training time and resources among the skills and information needed by the participants. Staff even compete for the available program time. The questions raised are many: How can the participants be briefed on technical matters related to their contracts, living conditions, work settings, as well as on the history, geography, economics, language, and culture of the host countries? How can participants' awareness of themselves as products of their own culture and Western society be developed? Beyond this, how can the participants be equipped with real intercultural communication/adaptation skills so that they can function happily and effectively abroad?

During April-July 1971 I served as a consultant to the Briefing Center to help them answer these questions. My function was to integrate all of these concerns: to make knowledge and experience complementary instead of conflicting, sequenced instead of fragmented; real, felt, and personal instead of unreal, removed, and abstract. The other members of the team were an applied anthropologist, a geographer/linguist, an area studies coordinator, a Briefing Center coordinator, and a family relations counselor.

The Program Design

The product of our interaction was an intensive simulation exercise, which took the first seven days of the program, followed by three days of a more traditional but self-directed area studies program. The first part of the program was intended to give interculturally naive participants an intercultural experience that would make them more aware of their own "Canadianness" and an opportunity to gain new perceptions and practice new behaviors. We also wanted to provide an experience during the first phase of the program that would enable participants to ask more sophisticated questions during the second phase. During the second phase they would have access to various sources of information —people who had been abroad, host nationals, area experts, film, and a resource library.

The large number of participants (140) was divided into smaller groups of twelve to fifteen each. The group format was used to facilitate involvement, increase psychological comfort, promote interpersonal sharing, and to enable persons to practice their intercultural communications skills. Unlike many other pre-departure programs, we saw the whole family as the basic unit to be trained, not only the working spouse; therefore the wives as well as some dozen teenagers also participated. Husbands and wives were not in the same group as their spouses, however.

The groups were led by a staff composed of former international volunteers (Canadian University Service Overseas, British Graduate Volunteer Service Overseas, U.S. Peace Corps) or persons working

with Indian and Eskimo groups in Canada. One trainer was Jamaican and another Canadian Indian. Thus, the staff itself presented a model of international and intercultural cooperation to the trainees.

Each group was asked to simulate a situation in which the group had crash-landed in one of four environments — desert, mountain, swamp, or island. The members of the group then had to evolve a way of coping with the environment and each other. They identified each member's skills, divided up labor, defined roles and dealt with the issues of religion, parenthood, family structure, sexuality, education, etc. In short, they evolved a new culture to cope with a new situation and a new environment.

New Cultures

The groups went about this in unique and creative ways. Some dismissed the nuclear family or rigid sexual roles. Some abolished any kind of formal education, choosing instead informal ways of educating their offspring. All the groups examined their Canadian culture, retaining what they admired and discarding what they did not like. During this process they learned that there were more ways to cope with survival than they had been exposed to. They also discovered how culture serves as an adaptive mechanism for different groups in different circumstances. The training program ensured that the participants would experience concretely these more abstract but necessary concepts, which would help them to appreciate other cultures and to work more effectively overseas.

One of the peak learning experiences came when, four days into the simulation, each group was brought into contact with another group. They were then separated to do a cross-cultural ("we" and "they") analysis and then brought back together to present their analyses to each other. In every case, one group felt superior to the other group! No matter how different the cultures were from each other, or from Canadian society, each group felt that it had used the previous days in the most productive way, had evolved a more functional culture, and had chosen most wisely what to preserve and what to discard.

Most participants were shocked at their own reactions. They felt, and later came to appreciate, that strong feelings of ethnocentricity could be formed in three days. The lesson was emphasized by the fact that these feelings were about another group of Canadians (even a group with their own spouses in it)! "If I feel this way about my fellow Canadians, how will I feel about the host nationals where the differences are so much more vast?" asked many of the participants. At this point they were more than ready, even eager, to discuss concepts like cultural identity and intercultural perception.

"Experts"

Another very significant encounter occurred on the fifth day. Groups from different environments were asked to prepare international development projects and request international development aid "experts." These experts found that the experience of their own "donor" group had conditioned them to make invalid assumptions about the "recipient" group and hence had a negative effect in their helping efforts. These assumptions were based upon the very different experiences, values, socio-cultural institutions, goals, etc., which they carried from their old group into the new. Most confusing of all to the "experts" was that the groups they had come to help often decided that they either did not want help, wanted a different kind of help, or simply resented the way in which the help was offered. Very often the "experts" sought to convince the recipient group of the benefits that would accrue if such assistance was accepted. Most "experts" tried more to convince than to listen to the real needs of the recipients.

When the "experts" returned to their groups, they helped "train" a second pair of consultants, who in turn went to the recipient group. The second pair fared a little better, but were often hampered by the inaccurate perceptions of the first pair. In this sequence of experiences, most participants learned about change agency and the need for listening with skepticism to those "who have been there."

At the end of the experiential simulation, participants were regrouped according to the area or country they were going to. They were presented with a list of persons, films, books, and slides which they could pursue during the last three days. With the simulation fresh in their minds, most groups structured themselves into ten-hour working days. They were eager to acquire the information that related both to their recent experience and to their anticipated experience overseas.

The participants and staff felt that the questions that were asked were far superior to those of previous groups, who had undergone more traditional programs. Equally important was the fact that the interest of the participants shifted noticeably from purely technical and logistical matters to concerns about intercultural and interpersonal adjustment problems. A new realism emerged about the difficulties of successful adaptation: many realized that technical and administrative competency in one's culture does not guarantee success in a different culture.

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HONG KONG SINGAPORE

大利牌

洗衣机

泰國盤谷

銀

英聯邦

油石

ABC飯店

ROLEX

中僑

國際大酒

樓

KINGSTON
RESTAURANT



A BUSY STREET IN KOWLOON,
HONG KONG. [PHOTO: HONG KONG
TOURIST ASSOCIATION]

Developing Export Industries: The Experience of Hong Kong and Singapore

Theodore Geiger and Frances M. Geiger

[Hong Kong and Singapore provide two examples of export-led development. While both city-states accomplished the difficult task of building internationally competitive manufacturing industries, they followed different paths to that end. The Hong Kong government remained in the background following a free trade policy while providing political stability and economic facilities. The Singapore government has played a more activist role, stressing encouragement and guidance of foreign investment.]

Industrialization has long been a principal objective of many developing nations. But, until a few years ago, the industries to be developed were generally conceived as serving the domestic markets of the countries concerned; in other words, the aim was import substitution. Recently, however, a growing number of developing nations have become interested in industrialization primarily to serve foreign markets, that is, to increase the value and variety of manufactured exports. Instead of selling all or most of the output of the new industries in protected domestic markets where they often enjoyed monopoly positions, these countries are trying to penetrate foreign markets in competition with both other foreign and local producers. Hence, the new export-oriented industries must above all conform to the requirements — which they do not set themselves — that their prices, quantities, qualities, delivery dates, credit terms, and other relevant conditions of sale be regarded by the foreign importers as more advantageous than those offered by their competitors.

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These stringent requirements are especially difficult for new exporting industrial firms to meet. On the one hand, as newcomers without already demonstrated performance capabilities, their terms often have to be better than those of the established suppliers in foreign markets. On the other hand, as new enterprises, their efficiency tends to be substantially lower and their costs higher than those of more experienced companies with bigger production runs. Moreover, they may lack the necessary marketing contacts and the requisite information regarding the performance standards, styles, fashions, packaging, and other characteristics in demand in the markets they are seeking to penetrate. Hong Kong and Singapore have successfully overcome these difficulties in developing their manufacturing industries for export. Study of the different ways by which each city-state has done so can be helpful to other countries attempting to develop their own export industries.

Until the end of the 1940s, both Hong Kong and Singapore were primarily entrepôts with China and Malaya cum Indonesia respectively, as their hinterlands. An entrepôt is an economic center — usually a port — that carries on certain essential distributive, financial, transportation, and communications functions. The entrepôt continuously collects its hinterland's products, and by combining, sorting, grading, semiprocessing, and storing these commodities, the entrepôt is in a position to meet the specific quantitative and qualitative requirements of buyers in other countries. Conversely, the entrepôt maintains a continuing inventory of the foreign raw materials and manufactured goods required by its hinterland, and reexports them to the latter's merchants and manufacturers in needed quantities and on suitable credit terms. These importing and exporting activities inevitably require ancillary shipping, insurance, banking, and communications services, as well as the facilities, equipment and supplies for carrying them out. Finally, retailing and other service enterprises are needed to meet the consumption needs of the people engaged in entrepôt activities.

Increasingly in the years since World War II, Hong Kong and Singapore have been in process of transformation from colonial entrepôts into more complex city-states. In political and psychocultural terms, this development has gone further in Singapore as a result of its attainment of independence. Nevertheless, even though Hong Kong continues to be politically a colony of the United Kingdom, the fact that it is virtually autonomous in economic affairs and social welfare, combined with its other relevant characteristics, justify considering it to be a self-sustaining city-state. Moreover, in economic terms, the transformation is more advanced in Hong Kong, which is no longer importantly dependent upon entrepôt trade with a hinterland but now relies heavily upon the export of its own manufactured products to markets in other parts of the world. Although Singapore has also become a major manufacturing center, its entrepôt activities still constitute about half of its total foreign trade.

Hong Kong

In the years immediately after World War II, Hong Kong was confronted by two developments, either of which could have been disastrous. While the size of its population quadrupled within 10 years, the most important part of Hong Kong's economy — its entrepot trade with China — was interdicted by the United Nations embargo imposed during the Korean War. Instead of collapsing under the combined impact of these events, Hong Kong turned them to its advantage through the dynamic entrepreneurship of its businessmen, the energy and adaptability of its people and the constructive policy of its government. This outcome required a complete transformation of the nature of its economy. From being primarily an entrepot, Hong Kong converted itself into an industrial economy making an increasing volume and variety of consumer goods and intermediate products for export to competitive world markets.

With a population of 1.6 million in mid-1939, Hong Kong had less than 600,000 when the Japanese surrendered in 1945. Thereafter, the number of people multiplied as many former residents returned from mainland China to which they had fled during the War, refugees from the advancing communist armies poured into the city-state, and the birth rate increased to a high level. Population was 1.8 million by the end of 1947, 2.2 million by the end of 1952 and 2.6 million by the end of 1955. There was no housing for a large proportion of these people nor did employment opportunities exist for the rapidly growing numbers of men and women of working age. Although entrepot trade with China revived satisfactorily during the late 1940s, it could not provide nearly enough jobs for people seeking work nor could it generate the private incomes and government revenues needed to house, feed and clothe the city-state's mounting population. Then, the UN embargo on trade with China at the height of the Korean War dealt Hong Kong's entrepot trade a near mortal blow. Its exports to China — 36.2 percent of its total exports in 1951 — fell from HK\$1,604 million in that year to HK\$520 million in 1952. In these circumstances, Hong Kong had to find a new way of life — and, moreover, to do so almost completely on its own. During those years, the only outside aid it received was for relief and rehabilitation, not for development.

A key factor in launching the industrialization process were a number of refugee Shanghai businessmen with long experience in operating cotton spinning and weaving factories. They reestablished these activities in Hong Kong with machinery brought with them from Shanghai or bought in Europe and the United States. As vital were the cadre of foremen and skilled workers who accompanied them from Shanghai, the readily available work force in the city-state eager for jobs and training, the credit forthcoming from Hong Kong's banks, and the export-marketing channels provided by the long-established British and Chinese merchant houses.

Started in this way in the late 1940s and early 1950s, the city-state's industrialization has continued ever since. Hong Kong producers gradually diversified into woolen and man-made textile products; clothing and footwear of all kinds; toys, artificial flowers, handbags, luggage, furniture, and other types of personal and household goods made of plastics, leather, wood, and metal; consumer durable goods, such as radios, optical and photographic equipment, and electrical appliances, as well as parts, components and other intermediate products for the electronic and electrical industries; and recently into more sophisticated forms of machinery and capital equipment. Although the lead was taken by Shanghai entrepreneurs, the Cantonese and other South Chinese forming the great majority of Hong Kong's inhabitants soon followed them into manufacturing operations.

The city-state's development as a manufacturing center both depended on and further stimulated the growth of ancillary activities, such as the construction of factories and warehouses, transportation and communication facilities, public utilities, offices and retail shops; and of ancillary services, such as banking, insurance and shipping, and the establishment of accounting, advertising and legal firms. These activities and services were attracted to the city-state not only by the prospect of profit but also by its political stability and freedom of trade and investment, and by the government's sound fiscal and monetary policies and very low rates of taxation. They were undertaken by local British and Chinese entrepreneurs and by American, European and Japanese banks and business firms, which started branches and subsidiaries in Hong Kong. In turn, the external economies made possible by the availability of these goods and services attracted increasing numbers of foreign companies to locate their regional headquarters in the city-state even though they did not have manufacturing operations there. By the mid-1960s, Hong Kong was second only to Tokyo in East Asia as a financial, insurance, shipping, and business-service center. Finally, the emphasis on the production of consumer goods of all kinds, as well as the government's free-trade and low-tax policies, made Hong Kong a gigantic shopping center for tourists, who flocked to the city-state in growing numbers during the 1950s and '60s to buy and to enjoy its spectacular scenery.

Full employment was achieved by 1960 and has been maintained ever since. Through the development of the foregoing activities, the rapidly growing labor force was transformed from the unemployed liability of the immediate postwar years into an increasingly valuable productive asset. Product and income accounts are available only since 1966; in that year, Hong Kong's gross domestic product was HK\$10.9 billion and it more than doubled in current prices to HK\$22.9 billion in 1972, a real increase of nearly 60 percent. At the average exchange rate for 1972, this represents a per capita GDP of about U.S. \$1,000. There has been a substantial real increase in consumer expenditures; for example, 80 percent of Hong Kong's households were estimated to own television sets by 1972. Moreover, in 1954, the government started upon one of the world's most successful programs of

low-rent residential construction that, by 1972, had housed or rehoused 46 percent of Hong Kong's 4 million people. By then, too, free primary education was guaranteed to every child, over four hospital beds per 1,000 people and numerous low-cost medical clinics were available, social-welfare programs and public assistance to the needy had been started and were steadily being expanded, and recreational and cultural facilities were being rapidly increased. In 1972, the government announced ambitious new targets under which, within 10 years, 1.8 million additional people would be housed in new or improved low-rent accommodations, free secondary education would be made available at a rapid rate to all children desiring it, advanced technical education facilities at the new Polytechnic would be tripled and the two universities expanded by 1978, and social-welfare services and aid to needy families and individuals would again be increased substantially over the next few years.

Development of export markets for manufactures. In developing export markets for Hong Kong's new manufactures, the initiative was taken in the early 1950s by the British and Chinese merchant houses with long-established commercial ties both within and outside the region. Previously engaged in supplying the East and Southeast Asian countries with cotton textiles and other manufactured goods produced in China, they found little difficulty in substituting Hong Kong-made products for them. In many cases, these goods were identical with those produced by the same manufacturing firms when they had previously been located in Shanghai, and hence they were already known to buyers in East and Southeast Asia.

Despite the ease with which this substitution was made in the early 1950s, East and Southeast Asian countries did not continue to be Hong Kong's major export markets for manufactured goods for three reasons. First, as these countries obtained their independence and sought to accelerate their economic and social development, they began to foster their own industries through protective tariffs and other devices that eliminated, or prevented the growth of, competing imports. Second, the rapid recovery of Japan's much older, bigger and more diversified textile industry provided strong competition for those imports still permitted by these countries. Third, the potential of markets elsewhere in the world, especially in the high-income nations of North America and Western Europe, presented the possibility of more profitable alternatives to Hong Kong's manufacturers and exporters.

Thus, the crucial question for Hong Kong in the mid-1950s was whether it would be able to realize the potentialities of these extraregional markets. An indispensable contribution of Hong Kong's government was to assure the political stability and economic conditions necessary for market forces freely to stimulate the growth of trade and industry. In addition to its free trade and low tax policies, the government also fostered the development of manufacturing industry for export by educating

Hong Kong's private sector to the potentialities of overseas markets and publicizing abroad the productive capabilities of the city-state's entrepreneurs. Hong Kong's merchants and manufacturers responded eagerly to these favorable stimuli, and their initiative proved of decisive importance.

Hong Kong's merchant houses took the lead in developing the U. K. market in the early 1950s. Through their branches or correspondent importing firms in the United Kingdom, they made contact with British textile-finishing companies or wholesale fabric distributors who were interested in the different kinds of cotton gray goods and yarn-dyed and printed piece goods that Hong Kong's new factories were increasingly producing. Hong Kong's low wages and other costs, the experience with production and quality controls already gained in Shanghai by many of its managers and technicians, and the skill and flexibility of its industrialists, merchants and shippers provided its exports with important comparative advantages.

In the cases of cotton yarn and gray goods, Hong Kong's competitive capabilities with respect to prices, quantities, qualities, and delivery dates were sufficient to assure it a substantial and growing share of the U. K. market. These commodities are generally manufactured by standard types and qualities in long production runs, and hence could be sold either from inventory or to order. In the case of wearing apparel, considerations of style and the close control of sizes, sewing, accessories, and other specifications are as important as prices, quantities and delivery dates. Located halfway around the world from the United Kingdom, Hong Kong's clothing manufacturers had little, if any, idea of the styles, colors and other specifications required in this highly competitive consumer industry. To produce for inventory in expectation of orders would have been foolhardy. Sound practice demanded that they manufacture only to fill specific contracts.

The crucial link between the Hong Kong entrepreneur and clothing retailers and wholesalers in the United Kingdom was primarily supplied by Hong Kong's British-owned merchant houses. Contacting department stores, chain stores and other large distributors in the U. K. market, they ascertained the specific design, size and other requirements and arranged for the placing of orders with Hong Kong manufacturers capable of meeting these specifications. While the garments were in production, the merchant houses undertook to test whether they conformed to the requirements of the contracts. They also facilitated shipments so that the goods would arrive in the United Kingdom on time. Through their U. K. branches or correspondent firms, they kept close touch with changing fashions in the British market, and the flexibility of Hong Kong's manufacturers enabled them to bid successfully for contracts to supply the popular styles and colors for each forthcoming season.

Exports of wearing apparel to the United States also grew rapidly during the late 1950s and soon surpassed those to the United Kingdom. The

American market is many times larger than the British, and it tends to be more highly competitive, fashion conscious and volatile. Both the opportunities and the risks are much greater. For these reasons, Hong Kong's clothing exports to the United States were in the main established by a different method than that responsible for the earlier penetration of the U. K. market. At the governmental level, the Hong Kong Department of Commerce and Industry arranged for participation in trade fairs and exhibitions in North America and Western Europe to acquaint those potential markets with Hong Kong's manufacturing abilities, which were also publicized through the export promotion sections of British embassies and by other means. Hong Kong's business organizations — such as the General Chamber of Commerce, the trade associations in the various industries, and the Chinese Manufacturers Association — undertook to educate their members regarding the possibilities and requirements of overseas markets, and they cooperated with one another and with the government in organizing trade missions. These efforts met with an active response on the part of many Hong Kong manufacturers eager to diversify their production and their markets so as to increase the volume and profitability of their businesses.

At the same time, the large mail-order houses, chain stores, department stores, wholesale distributors, and importers in the highly competitive American market were equally eager to find new low-cost and adaptable sources of supply. Knowledge of Hong Kong's capabilities came to them not only through the publicity efforts noted above but also through trade publications, word of mouth, and reports from their representatives and correspondents overseas, especially in the United Kingdom. In some cases, the American business firms took the initiative in contacting Hong Kong manufacturers; in other cases, the initiative was from the latter. In both ways, links were rapidly forged between Hong Kong and the American market which, by the end of the decade, made the latter the largest importer of the former's goods.

The vast size and highly competitive nature of the American market were important influences reinforcing the entrepreneurial vigor of Hong Kong's businessmen in imparting an extraordinary dynamism to the city-state's private sector. An order from a large American mail-order house or chain store was a big and profitable prize for which Hong Kong manufacturers eagerly competed. But, a producer who obtained a contract to make men's shirts for Sears Roebuck was thereby usually debarred from getting a similar order from its competitors, such as Montgomery Ward or J. C. Penny — a restriction which opened the way for other manufacturers to obtain a share of the business. Thus, the competitiveness of the buyers not only enhanced the competitiveness of the producers but also greatly expanded the latter's opportunities. Moreover, the highly diversified business of the large American department stores and mail-order houses meant that the variety of products of interest to them was continuously widening. If they bought

men's shirts in Hong Kong, why not men's pants, or women's sweaters, or girls' dresses — or toys, or household furnishings, or furniture, or any other of the many different types of consumer goods sold in large volume to the American public.

The rapid and continuous growth of Hong Kong's exports to the United States since the late 1950s attests to this dynamic interaction between highly competitive producers and highly competitive buyers. Moreover, this relationship has had a major "spill-over" effect in enhancing the eagerness and ability of Hong Kong's manufacturers to develop other export markets for their products. Both directly and through Hong Kong's merchant houses, they vigorously sought to find purchasers in continental Western Europe, especially in prosperous Germany, which became the city-state's third largest export market by the early 1960s.

The Netherlands, the Scandinavian countries, Switzerland, and Italy were also developed into major customers, as were Canada and Australia. The pattern of Hong Kong's trading relationships with Japan was also set during these years. During the late 1950s, the rapid expansion and diversification of Hong Kong's clothing industry generated demands for fabrics that exceeded the volume and variety that could be produced by its own textile factories. In consequence, Hong Kong manufacturers soon turned to Japan's very much larger and more diversified textile industry to obtain not only additional quantities of cotton piece goods but also woolen and worsted materials and the new man-made fabrics and mixtures of natural and synthetic fibers. In the course of the 1960s, materials, components and subassemblies for other newly developed Hong Kong industries — especially those using plastics and making electrical and electronic goods — were also increasingly imported from Japan. However, Hong Kong's exports to Japan have not grown nearly as fast due to the latter's trade barriers and informal discrimination against imported manufactured goods.

Over the decade, exports of domestic manufactures increased five-fold from HK\$2, 282 million in 1959 to HK\$10, 518 million in 1969, constituting 80 percent of the city-state's total exports in the latter year. In contrast, the entrepot trade, as measured by reexports, amounted to only 20 percent. These proportions marked a reversal of the relative importance of domestically manufactured exports and the entrepot trade that had prevailed in the immediate postwar years. Domestically manufactured exports have continued to grow rapidly, reaching HK\$15, 245 million in 1972. Another indication of the increasing significance of manufacturing may be seen in the fact that employment officially recorded in this category rose from 177, 000 in 1959 to 580, 000 in 1972.

Growth process in the private sector. With one exception, this extraordinary growth of industrial production, employment and exports took place overwhelmingly in and from factories owned and managed by Chinese residents of Hong Kong. Only in the manufacture of electronic components —

transistors, diodes, integrated circuits, etc. — have foreign-owned plants, principally American, become responsible for a substantial share of the output. Even in the manufacture of electronic components, the proportion made in Chinese factories is by no means negligible, and in the production of finished consumer electronic goods, such as radios, they predominate.

In the early 1950s, manufacturing was limited to the small number of local firms surviving from the prewar period and to the larger group of experienced Shanghai businessmen newly settled in Hong Kong. Since then, the number and variety of industrial establishments have continuously increased not only through the expansion and diversification of the already established firms but also through the emergence of thousands of new entrepreneurs.

Typically, the new entrepreneurs are former employees of existing manufacturing establishments, usually technicians, foremen and skilled workmen or junior managers, salesmen and other office personnel. The main sources of initial investment capital for these new entrepreneurs are their own savings and those of their kinsmen and friends. Frugality and thrift are deeply ingrained in Chinese culture and, in the case of most Hong Kong inhabitants, have been strongly reinforced by the anxiety engendered by their emigrant or refugee experiences. At the same time, other cultural traits — the propensity to risk taking, the compulsion to become one's own master, the desire to obtain the wealth and social status that go with business success — incline them not simply to bank their savings but also to invest them directly. In addition, kinship ties and obligations predispose relatives and friends to lend money to new entrepreneurs, generally at prevailing rates of interest but for unspecified periods and without security. In these ways, beginning producers are able to accumulate enough capital to make a part payment for the necessary machinery — often used equipment — or to rent it, and to lease space in a factory building and to hire workers. Usually, also, the needed raw materials and components can be obtained from importers or local processors on credit terms with a down payment.

Since the credit available from machinery suppliers is usually for one to two years and that from materials suppliers is even shorter term — one to three months — debt servicing begins very soon, and the business must, therefore, be gotten into operation as quickly as possible. Indeed, the new entrepreneurs are generally so undercapitalized that they can buy machinery and materials on credit terms only if they already have reasonably firm prospects for contracts. The big foreign buyers, and the large British and Chinese merchant houses are unlikely to place orders with untried entrepreneurs whose businesses are not yet in operation. How, then, does the beginning manufacturer make the market contacts necessary for him to get started? There are a variety of ways.

Probably the most important is by means of a subcontracting arrangement with an established company. Both the rapid growth and diversification of Hong Kong's economy and the characteristics of many of its consumer-goods industries and their markets are conducive to a substantial amount of subcontracting among manufacturing firms. Especially in the clothing industries, the larger factories often seek or receive more orders than they can fill with their existing capacity in the time required. Or, certain sewing and finishing operations can more profitably be delegated to subcontractors than carried on in the firm's own factory because the former have smaller overhead expenses or are willing to realize smaller profit margins. Such conditions fostering subcontracting are also prevalent in other Hong Kong industries. In many cases, a new entrepreneur can become a subcontractor of an established firm because he was formerly one of its technicians, foremen or skilled workmen and, hence, is known to and trusted by its management. Or, he may be a kinsman of its owner or of a senior executive and thus entitled to help.

The putting-out system, widely practiced in Hong Kong, provides another method for starting new manufacturing firms. Many enterprising Hong Kong foremen and skilled workers carry on putting-out operations in addition to their regular jobs. They arrange on commission for members of their families and neighbors to work at home on sewing and finishing garments and on making clothing accessories, artificial flowers and other products requiring easily portable machinery or none at all. These household activities often are the nucleus from which are developed larger, full-time manufacturing enterprises.

In other cases, the new entrepreneur was a salesman or other office employee of a company making materials, parts, components, or supplies for Hong Kong manufacturing firms. Having access to these customers, he can establish an independent relationship with one or more of them as a result of their already existing mutual confidence, by offering them a share in the new company, or by inducing one of their trusted employees or relatives to go into business with him. Such relationships can sometimes be set up with smaller or intermittent foreign buyers, although the larger overseas importers of Hong Kong products will generally deal only with established manufacturing firms whose capabilities are known.

Thus, there are several ways in which a new entrepreneur gets the all-important initial orders. Once he has them, he may be able to offer such contracts, particularly those with large, reputable local companies, as security for a bank loan. In this way, he obtains funds to help meet his operating expenses and to service his debt to machinery and materials suppliers. If his previous experience did not qualify him to set up and supervise the production activities of his new business, he must hire a technician or highly skilled foreman. As such personnel are in great demand, the new entrepreneur may have to offer even a qualified kinsman or friend either a share of the business or significantly higher wages than he was previously earning.

The recruitment of semiskilled and unskilled workers was easy during much of the 1950s owing to the large number of refugees already in Hong Kong and the additional people who followed them. Total mid-year population rose from 2.5 million in 1955 to 3.2 million in 1961, due both to the continuing influx of refugees and to a high birth rate. (Soon thereafter the flow of refugees and the birth rate declined.) Despite the rapid growth of the population of working age, the expansion of industry and other economic activities had reduced unemployment to minor proportions by the late 1950s, with the 1961 census showing 1.7 percent of the economically active part of the population unemployed or seeking work. Although labor has remained tight, the earlier high birth rates have continued to bring enough school leavers and other young people of both sexes into the labor force after the decline of the refugee influx to prevent labor shortages from slowing economic growth. Moreover, such is the desire to maximize family and individual incomes that many married women work full- or part-time in factories and offices, or at home under the putting-out system. In addition, many married men have second jobs or also work at home in their spare time.

The disappearance of significant unemployment and the decline in the rate of growth of the economically active portion of the population have affected economic development in several ways. Real wages and disposable income have risen steadily, with beneficial effects on the living standards of most families. Labor turnover has increased, especially among young unmarried male and female workers, whose pecuniary consciousness and rising consumption expectations make them very responsive to even small differentials in money wages. Hitherto, new entrepreneurs have generally been able to recruit the necessary workers by offering slightly higher rates of pay, news of which quickly spreads among the floors in the flatted factories, on the crowded buses, trams and ferries, and in the large residential housing blocks. Finally, since the mid-1960s, the steady rise in wage rates has been encouraging capital investment in labor-saving machinery in more and more industries.

Diversification of the economy. Established manufacturing firms, old and new, grow both vertically and horizontally. Textile spinning and weaving companies start branches or subsidiaries to make wearing apparel; enterprises assembling radios and other electronic equipment begin to produce transistors, diodes and other components, and vice versa. At the same time, or alternatively, firms may expand horizontally. A successful flashlight company starts a toy factory; a toothbrush manufacturer becomes the world's largest producer of medium-priced binoculars, as well as an exporter of low-priced cameras to Japan, among other markets.

Today, industrial development is entering a new stage as the competition of newly industrializing countries and the discriminatory and

protective trends in the developed nations combine to impel Hong Kong's manufacturers to intensify their product and market diversification. Encouraged by favorable government policies, foreign and domestic companies are beginning to manufacture a broadening range of more varied, capital intensive and technologically advanced consumer and producer goods, both intermediate and finished.

The process whereby new businesses are started and old businesses are expanded and diversified has occurred in Hong Kong not only in manufacturing industry but in all of the other major types of economic activity. However, the development of manufacturing industry has been, in one way or another, the "engine of growth" for all of the others, except perhaps for the continuing entrepot trade. Manufacturing industry has directly stimulated the development of other activities catering to its needs. In addition to the public-sector services provided by the government, the private-sector activities fostered by manufacturing include the import of materials, components and fuels; the production of electric power; the furnishing of motor transport, port and storage services and ocean shipping; the building of factories, offices, warehouses, and other related construction; and the provision of a multitude of ancillary services, such as banking, insurance, engineering, accounting, advertising, and maintenance and repair. Indirectly, the income that the growth of industry has created for its owners, employees and suppliers has both augmented the demand, and generated most of the revenues and investment funds required, for the construction by the government of housing, schools, hospitals, roads, and other public facilities; and for private interests to build and operate housing, shops and restaurants amusement and recreational amenities, to provide transportation and communication services, and to import and distribute at retail, food, clothing and other products needed for local consumption.

Non-Chinese locally incorporated companies and the branches and subsidiaries of foreign firms have played major roles in the development of banking, commercial and residential construction, insurance, engineering, advertising, electric power, transportation, and communication. But, in these fields, too, Chinese entrepreneurs have been important. In ocean transportation, for example, two of the largest shipping groups in the world in terms of tonnage owned and chartered are headed by Chinese businessmen resident in Hong Kong.

Another major activity, to which both foreign and Chinese businessmen have contributed, is tourism. Here, too, industry played an important stimulative role by supplying much of the consumer goods that became Hong Kong's main attraction for tourists from all over the world. Hong Kong's location on the chief intercontinental and regional air and sea transport routes bring many travelers to the city-state. In 1972, over a million stopped off there for several days of which shopping occuppied a good part. And, the construction of hotels, restaurants and amusement facilities catering to tourists naturally boomed as well.

Hong Kong's diversified and increasingly sophisticated economy and its locational advantages have been responsible for its growing popularity as a regional headquarters for foreign companies of all kinds. Many of the North American, European, Japanese, and Australian firms doing business in Hong Kong also manage their operations in other parts of East and Southeast Asia from their offices in the city-state. In addition, a growing number of other foreign companies have been locating their regional headquarters in the city-state even though they conduct no business activities per se in Hong Kong. For their part, Hong Kong's own businessmen have been increasing their investments throughout East Asia, while retaining their headquarters in the city-state for managerial and financial purposes. In turn, these developments have helped to increase employment and stimulate the growth of the service sector. Today, the movement, the purposeful hustle-bustle, the business go-getting and economic sophistication of Hong Kong's people have to be seen to be fully appreciated.

Singapore

Like Hong Kong, Singapore was confronted in the postwar years with a series of developments that could have been disastrous. And, thanks to the policies of its government and the good sense and hard work of its people, Singapore, too, was able to meet its challenges in ways that at least offset their adverse impacts, where nothing more was possible, and that brought positive benefits where such results could be achieved. Hong Kong's problems were concentrated in time and more massive in size, while those with which Singapore had to deal were more varied in nature and were spread out over a longer period.

Singapore's first major challenge was the so-called Emergency of 1948-60, the prolonged warfare waged in neighboring Malaya by communist guerrillas, that interacted with the growing communist influence in the city-state's trade unions and domestic politics. A second related challenge was the rising unemployment resulting from the stagnation of the entrepot trade during the 1950s and the continuing high rate of population growth, and the attendant labor unrest. While the guerrilla warfare was suppressed by the combined efforts of the British and Malayan governments, communist influence in the trade unions and in politics continued to be strong in Singapore. It began to decline only after Lee Kuan Yew and his associates in the People's Action Party (PAP) came to power in 1959 and in the early 1960s initiated a strategy designed to cope with the city-state's serious unemployment and popular discontent.

The 1963 merger with Malaya in the new Federation of Malaysia provoked the next serious challenge. This was Indonesia's "confrontation policy" and the sabotage and guerrilla activities against Singapore and the Federation's member states in North Borneo, instituted by Sukarno because he believed that the latter should belong to Indonesia. Confrontation disrupted — although it did not put a stop to — Singapore's

very important entrepot trade with Indonesia, aggravating the already existing unemployment and labor unrest. Then, in 1965, the Malaysian government terminated the merger with Singapore in consequence of political and economic disagreements. Singapore, now suddenly an independent city-state, faced the new problems and costs of defense and of carrying on political and economic relationships with other countries. At the same time, its domestic market was reduced to its premerger size, thereby removing the basis for its import-substitution policy. In response, Singapore's energetic leaders shifted quickly to the far more difficult strategy of export-oriented industrialization. Their success was sufficient to achieve virtually full employment by the early 1970s despite the city-state's most recent challenge — the gradual reduction to minor proportions of the British military bases that had directly and indirectly provided jobs for approximately 50,000 people. By 1972, Singapore's economy was rapidly industrializing, and in that year its gross domestic product was over S\$7.3 billion (US\$2.6 billion at the 1972 exchange rate), equal to a per capita GDP of over US\$1,200 for the city-state's more than 2.1 million people.



Rubber is being loaded on a freighter in the Port of Singapore (Photo: United Nations).

Membership in Malaysia: an attempt at import substitution. Singapore's leaders had opted for union with the Federation of Malaya for both economic and political reasons. They were convinced that Singapore's economic future depended upon as complete economic integration as possible with Malaya, its major hinterland. Such a link was believed to be essential not only to preserve a substantial part of Singapore's entrepot trade but also to provide a big enough market for the development of manufacturing industry in the city. They recognized that Singapore could not continue indefinitely to rely solely upon entrepot activities when all of the Southeast Asian countries were aiming to develop their own direct trade relationships. Indeed, the inception of such efforts by Indonesia and others was in part responsible for the failure of Singapore's exports and imports

to grow during the 1950s and for the consequent rise of unemployment as the labor force increased. Hence, the PAP leaders concluded that other economic activities, notably manufacturing, had to be developed to provide the needed employment and the desired growth of income. Also, they recognized that the new import-substituting industries could operate on a large enough scale to be efficient only if they had free access to a market embracing Malaya's 7 million people in addition to Singapore's 1.6 million in 1960.

Manufacturing activities already existed in Singapore but they consisted largely of semiprocessing the raw materials, especially rubber, comprised in the entrepot trade; producing processed foods and beverages, printed materials, and other light consumer goods; and providing metal-working, electrical and mechanical services for maintenance and repair, particularly in shipping and air transport. Motor vehicles were also assembled from imported components. These operations, however, could supply a cadre of experienced managers, technicians and skilled workers for industrial growth and diversification. In addition, Singapore had most of the other essentials for industrialization. Thanks to the entrepot trade, it already possessed an extensive infrastructure — electric power, water supply, communications, port and storage facilities, etc. For the same reason, a modern banking system was in operation that could mobilize local capital and provide credit. The substantial number of unemployed, most of them with some education and willing to adapt themselves to the disciplines of industrial work, could supply the labor force for the new factories. The required marketing network existed in the wholesale and retail facilities already distributing imported manufactured goods to Singapore's domestic market, with its comparatively high per capita income, and to the much bigger domestic market of Malaya.

The principal lack was the technologies needed for new industries. But, importing them from Western Europe, North America and Japan was not too difficult for Singapore's entrepreneurs. The best candidates for the initial phases of import substitution are such industries as building materials and paints, processed foods and beverages, soap and cleaning materials, tobacco products, household furnishings and supplies of all kinds, textiles and clothing, printing, and other light consumer goods whose technologies are relatively simple, standardized and often too old for patent protection. Assuming that the other prerequisites for industrialization are present, the services of experienced technicians from abroad for a year or two are usually sufficient to transplant the required technologies. Local entrepreneurs can obtain them by directly hiring individual technicians or the technical services of an experienced foreign producing or consulting firm, or by joint ventures with foreign companies. Alternatively, the latter can establish their own factories. In the early years of Singapore's industrialization, the bulk of the new investment in manufacturing activities was undertaken by indigenous

firms, which usually obtained the technologies they needed by direct hire of foreign technicians or of foreign producing or consulting companies.

To stimulate and assist local entrepreneurs to develop import-substituting activities, the Singapore government adopted legislation in 1959 granting approved "pioneer industries" up to five-years exemption from the 40 percent company profits tax, and generous depreciation allowances. In addition, it abandoned the principle of free trade, on which the city's entrepot economy had been based since its foundation, in favor of import tariffs and quotas to provide protection for these "infant industries."

After taking office in 1959, the PAP administration embarked on the preparation of a Development Plan covering the period 1961 through 1964. The Plan envisaged that the development of manufacturing industry would be the responsibility of the private sector, while the provision of an adequate infrastructure and of increased social services would be the responsibility of the public sector. Thus, despite their long-standing commitment to socialism, the moderate PAP leaders recognized that the government lacked the resources and skills for public ownership and management of the means of production. Instead, they opted for an active policy of government direction of and participation in the industrialization process. An Economic Development Board was established in 1961 as a semiautonomous agency within the Ministry of Finance. With an initial appropriation of S\$100 million, the Board was given wide powers to make loans to approved indigenous and foreign companies and to subscribe to their stocks, bonds and debentures; to publicize Singapore's development opportunities at home and abroad; to take the initiative in arranging for local and foreign private entrepreneurs to start manufacturing activities and to grant them the privileges of pioneer industries; and to provide technical advice and assistance to new and expanding manufacturing industries and facilitate relationships between pioneer companies and government departments. The Board was also responsible for the planning, construction and operation of the industrial estates in which the great majority of Singapore's new manufacturing activities would be located. The Board was staffed with young, energetic economists, engineers and other professional civil servants under the dynamic and farsighted leadership of the Finance Minister, Goh Keng Swee.

In the early 1960s, public-sector and private-sector investments combined to give a substantial boost to construction activities, thereby providing more jobs. Also, the growth of manufacturing helped to expand employment but not by as much as had been anticipated. Although employment increased, unemployment rose even faster owing to the annual additions of young people to the labor force. During the period from 1957 through 1965, the labor force grew at an average annual rate of 1.9 percent, while employment increased at an average annual rate of only 1.4 percent. The unemployment rate, which was 5 percent in 1957, was 8.8 percent in 1966.

Popular attitudes as well as economic welfare were deeply affected by the events following the merger with Malaya in September 1963. The Indonesian government under Sukarno had expressed strong opposition to the formation of Malaysia, especially to the inclusion in it of the former British colonies in Borneo, which Sukarno regarded as part of Indonesia. Immediately after the merger went into effect, Sukarno activated the policy of "confrontation," under which economic relationships with Malaysia were severed, guerrilla warfare along the border with the new Borneo states was provoked and supported, and sabotage raids were initiated against Singapore and Malaya. On the one hand, confrontation was a serious blow to Singapore's entrepot trade with Indonesia. The city-state's total imports and exports declined by over 19 percent, due in large part to the severance of commercial relations with Indonesia. This reduction contributed significantly to unemployment in Singapore during the next two years. On the other hand, confrontation stimulated feelings of loyalty among Singapore's Chinese population and strengthened their support for the PAP government. Also, in accordance with their defense obligations to Malaysia, the British increased their military forces in Singapore, thereby generating greater local employment. In the absence of these British defense expenditures, unemployment would have been substantially larger.

Independence: promoting export-oriented industry. Singapore's postmerger relations with the Malaysian government came under increasingly serious strains. There were continuing disagreements over economic arrangements, such as the Federal authorities' desire to obtain a larger share of Singapore's revenues than the 40 percent originally agreed upon, their failure to consult Singapore before imposing new duties and taxes in the 1965 budget, the dispute over the allocation of Malaysia's quota for textile exports to the United Kingdom, and Singapore's feeling that the Federal authorities were unfairly trying to divert foreign investment to Malaya. These and other economic conflicts were paralleled by political tensions, which were more directly responsible for precipitating the Malaysian government's announcement of the dissolution of the merger in August 1965.

Singapore's expulsion caused consternation among the PAP leaders. Membership in the Federation of Malaysia had been the common foundation of their political and economic policies. They had counted on it politically to assure their security against external aggression (e. g. Sukarno's confrontation policy) and internal subversion, and economically to provide the enlarged domestic market required for rapid industrialization and the consequent reduction of unemployment. Nor could Singapore shift ultimate responsibility for protection and help to the United Kingdom, for it was now a fully independent, sovereign city-state.

To meet this challenge, the Singapore government moved rapidly to create Singapore's own defense forces and to establish diplomatic

relations with other nations, as well as to join the United Nations and other international organizations. However, the necessary changes in economic development strategy were much more difficult and would take longer to put into effect. As a member of the Federation, Singapore's major economic objective had been to foster import-substituting industries to serve the combined domestic markets of Singapore and Malaysia. But, after August 1965, the products of Singapore's manufacturing firms were subjected to the same protective tariffs and quotas as were Malaysia's other imports of these goods, thereby reducing their domestic market to Singapore alone. Moreover, the smaller scale of operations of many of Singapore's new industries necessitated more severely protective tariffs and quotas in order to prevent competition from lower-priced imports. The only alternative industrialization strategy was one aimed at manufacturing for export to world markets. But, such an approach involved much more rigorous requirements than import substitution. Enterprises producing for export have to be efficient enough to meet competitive prices in foreign markets and must also be able to develop the requisite marketing linkages. Moreover, they need a continuous flow of information regarding changing styles and fashions if they make textiles, wearing apparel and other soft goods, and more complicated and exclusively held technologies than hitherto required if they produce electrical and electronic products, transportation equipment, and other hard consumer and capital goods.

For these reasons, the responsible ministers and civil servants made the crucial decision that direct investment by qualified foreign companies would be the quickest way to meet these stringent requirements. Since its establishment in 1961, the Economic Development Board had been endeavoring to encourage foreign investment, and its efforts were now intensified. Fortunately, fully prepared industrial sites were readily available due particularly to the rapid construction of the 6,000 acre Jurong industrial estate during the first half of the 1960s. In late 1965, companies were permitted to deduct from their taxable income double the expenses of developing export markets. The pioneer-industries legislation (discussed below) was supplemented in 1967 by an act granting tax concessions on profits earned from the export of manufactured goods.

More important than tax incentives in attracting foreign investors to Singapore was the basic change gradually brought about by the PAP government in labor-management relations. After the secession of the communists and their left-wing sympathizers from the PAP party in 1961, the moderate PAP leaders sought to break their hold on the trade unions as well. The communist-dominated central labor organization was dissolved. The noncommunist unions formed the National Trades Union Congress, a new body established by the PAP. It was officially encouraged and by mid-1966 its affiliated unions had about 75 percent of the organized workers. In addition, the government passed a law in 1966 prohibiting strikes unless approved by a majority of members in a secret ballot, requiring registration of union officials at all organizational levels, and

forbidding noncitizens and people with criminal records from holding office in or working for a union.

Control over the trade unions made it possible for the government to prevent Singapore's comparatively high labor costs from rising at a rate that would have impaired the competitiveness of its manufactured exports in world markets. Such regulation was acceptable to trade-union members and the people generally because real wages were rising as the economy grew rapidly during the second half of the 1960s. Also, living standards were improving thanks in substantial measure to the government's housing, education, health, and other programs. The number of mandays lost in strikes declined drastically from over 388,000 in 1963 to 46,000 in 1965, 11,000 in 1968, and 2,500 in 1970. The rate of increase of Singapore's wage rates also fell, and the gap between its wage rates — hitherto much the highest in Asia after Japan — and those of Hong Kong, Taiwan and South Korea narrowed rapidly during the second half of the decade.

Stimulated in part by these changes, private-sector capital formation rose substantially: its annual value almost tripled from S\$234 million in 1966 to S\$666 million in 1969. According to Singapore's national-accounts estimates, the contribution of the manufacturing sector almost doubled from S\$487 million in 1966 to S\$897 million in 1969. The exports generated by this sector also nearly doubled over the period.

Table I. Paid-in Capital of Pioneer Establishments and Major Non-pioneer Establishments as of December 31, 1969

(S\$ million)

	Number of	Local		Foreign		Total Value	Fixed Assets Value
		Value	Percent	Value	Percent		
All pioneer establishments	236	222	47	250	53	472	586
Major nonpioneer establishments	269	209	66	109	34	318	356
All establishments	505	431	55	359	45	790	942

Source: *Economic Development Board, Annual Report '69*, p. 53.

Not only did manufacturing industry grow substantially after 1965, but the entrepot trade entered upon a period of unexpected expansion. Unsuccessful in compelling dissolution of the Federation, Indonesia used the end of the merger with Malaysia as a reason for discontinuing its confrontation policy — a change that was reinforced by the subsequent fall of Sukarno. Trade between Singapore and the other of its two most important hinterlands once again became legal. In addition, the escalation of the Vietnam War offered opportunities for meeting rapidly expanding military and civilian demands for imports of goods and services, which

Singapore's merchant houses were quick to exploit. In the late 1960s, too, oil exploration activities in the South China Sea and neighboring waters were increasing, and Singapore soon realized its potential advantages as a management headquarters and a center for producing and servicing the needed equipment. Finally, world trade experienced an extraordinary boom in the last years of the decade, of which Singapore was able to obtain a gratifying share. Thanks to these industrial and commercial developments, and to the related growth of public-sector expenditures, construction and service activities, Singapore's unemployment at last started to decline. The average annual rate of increase of employment exceeded that of the growth of the labor force from 1966 on.

Foreign investment. The attraction of foreign investment is the key to Singapore's development strategy. Since 1965, foreign companies have been playing increasingly important roles in Singapore's development, both in industrialization and in the expansion of exports. It is estimated that, at the end of June 1972, the accumulated foreign investment in Singapore's manufacturing industries totaled S\$1,874 million, of which two-thirds were made in the preceding two and a half years. Table 2 shows the major countries involved. Of the total, a large proportion was invested in petroleum refining by American, British and Dutch companies, and in oil-exploration equipment and services by U. S. firms. In the past, Japanese investment was largely concentrated in shipbuilding and repair but it is now branching out into machinery and equipment, including precision ball bearings. Electronic and electrical components and products are major fields for American, Dutch and German companies, and Rollei, the leading German producer of cameras and optical goods, is in process of transferring the manufacture of many of its standard products to Singapore. Hong Kong investment is mainly in textiles, clothing, radios, and other consumer goods.

Table 2. Accumulated Foreign Investment in Singapore's Manufacturing Industries as of June 30, 1972

Country	Gross Fixed Assets (S\$million)	Percent of Total
United States	618.2	33.0
United Kingdom	343.8	18.3
Netherlands	328.2	17.5
Japan	113.0	6.0
Hong Kong	106.1	5.7
Malaysia	64.8	3.5
West Germany	52.9	2.8
Other	246.8	13.2
Total	1,873.8	100.0

SOURCE: Government of Singapore.

Singapore offers two types of incentives to both local and foreign companies. The first is pioneer-industry status, which entails exemption from the corporate income tax and the tax on dividends for five years, and loss carry-forward privileges beyond the exemption period. Certain very large investments, such as petroleum refineries, may also be given a deduction of capital-cost allowances from their tax liabilities beyond the exemption period. Companies may also receive pioneer status for expansion of existing facilities. The second incentive is for companies making approved products and exporting at least 20 percent of their output, with the amount exported valued at not less than S\$100,000 a year. Export companies without pioneer status are entitled to tax exemption of their earnings from exports for 5 years; those with pioneer status may be exempted for as much as 8 years; and the large investments eligible for capital-cost deductions may continue to receive them for 15 years if they also qualify for export status. Training costs are counted as part of the investment in determining eligibility for tax exemption under these incentives. To qualify for either or both types of exemptions, local and foreign companies must undertake to invest specified amounts of capital and to make approved products. The list of approved products is revised from time to time in accordance with Singapore's changing development strategy.

In addition to administering the pioneer-industry and export tax incentives, the Economic Development Board attracts foreign investment through its useful planning, promotional and facilitating activities. Staffed by able and energetic personnel, the overseas EDB offices in capital-exporting centers contact companies in the industries selected for development and help them plan their projects. In Singapore, the EDB assists foreign companies to obtain the various licenses and approvals needed to incorporate a local subsidiary, qualify for government loans or equity purchases, rent or construct production facilities, import machinery and equipment, bring in executive and technical personnel, arrange for public utilities, comply with health, safety, labor, and other codes, etc. Once the subsidiary is in operation, the EDB continues to observe its performance to assure that its policies and practices contribute to the city-state's development objectives.

In cases where the growth and profit potentials of a new foreign-investment project are promising, the Singapore government — usually through its Development Bank — may seek a substantial though minority portion of the equity. Also, the government will provide up to 50 percent of the equity for smaller foreign firms capable of making technologically more advanced products in the city-state but unwilling or unable to invest enough of the required capital. These companies would, however, have the option of buying back a substantial portion of the government's equity. Management responsibility is generally left to the foreign company because the government's interest is less to control the subsidiary's activities than to enable the city-state to share in

its profits through dividends and capital gains. Hence, the government's attitude toward its equity participations in both foreign and local enterprises is largely businesslike.

Interviews with numerous foreign companies in Singapore indicate that tax exemptions were not the only, or even the main, reason why they invested in the city-state. Many pointed to Singapore's economic advantages: its hard-working, literate and predominantly English-speaking workers; its favorable labor and other costs relative to those at home or in other countries; its sophisticated banking, insurance, shipping, communications, and other ancillary services and facilities; and its pleasant living arrangements. All stressed Singapore's political advantages: its pragmatic, honest and self-confident political leaders and civil servants, the efficiency of its administration, the political stability and social peace it has enjoyed for a decade, and the consequent good relations prevailing between the government and the foreign companies. For the latter reasons especially, foreign companies have been more willing in Singapore than elsewhere to enter into joint ventures with local business interests and to agree to equity participation in their investments by the government.

The new development strategy. Indicative of its pragmatism and flexibility, Singapore has had two different development strategies since 1960 and has now embarked on a third. The import-substitution industrialization policy of the period before and during the merger with Malaysia was superseded by the export-oriented, labor-intensive manufacturing policy of the years after Singapore's separation from the Federation. More recently Singapore's leaders have been devising a new development strategy for the 1970s, whose main outlines were sketched by the Finance Minister in his 1972 Budget Speech. He stated: "The goal is to transform Singapore within ten years, at an economic development growth rate of 15 percent per annum, into a regional center for brain services and brain service industries." Per capita income would be doubled, which would cover the costs of the necessary development expenditures along with continuing increases in living standards provided "population growth is kept down to almost Z. P. G. (or Zero Population Growth)." The announced goal is to be achieved principally by means of four kinds of efforts.

The first is accelerated development of the professional and technical skills that the government has been seeking to foster since the adoption of the export-manufacturing strategy in the mid-1960s. An Industrial Training Board has been established to increase, improve and coordinate professional and technical training both in the educational system and in the private sector, indigenous and foreign. Technical education has been introduced into the secondary schools, and six new secondary vocational training institutes are being established. In addition, the technical training institutes at the college level and the professional schools and centers

in the universities are being improved. The industry-oriented effort is equally ambitious, including apprenticeship and on-the-job training arrangements, and off-the-job local and overseas training schemes, including some already underway that involve a sharing of the costs and the graduates between the Singapore government and the foreign companies providing the training. In addition, the immigration restrictions are being eased for already-trained skilled workers, technicians and professionals.

The second type of effort is the encouragement of applied research and development in Singapore. A Ministry of Science and Technology was established several years ago and its responsibilities have been expanded. It is helping the universities and technical colleges to improve their laboratories and other R&D facilities, and is considering setting up a Center for Applied Research, as well as strengthening the existing Singapore Institute of Standards and Industrial Research. In addition, the foreign companies are to be encouraged to move some of their R& D activities to Singapore through tax incentives and other means.

Third, the development of infrastructure is being accelerated, especially the improvement of ocean-shipping and air-transport facilities and telecommunications. A feasibility study is also underway of a mass rapid transit system for Singapore to ease the problem of moving people between their homes and places of work.

Fourth, the investment incentive system is periodically reexamined to make it more conducive to attracting high-technology industries and highly skilled service activities to Singapore, as well as fostering the further development of the city-state as a major international financial center along Swiss lines. The list of industries eligible in the future for pioneer status and export incentives has already been revised, removing the relatively low-skilled and labor-intensive activities in favor of those requiring high skills, advanced technologies and export markets. Among the industries on which Singapore hopes to concentrate in the years to come are petrochemicals, plastic and synthetic-fiber materials, engines and turbines, specialized industrial machinery of many types, electronic and optical products, office machinery, aerospace engineering and servicing, construction and materials-handling equipment, and scientific and medical instruments and equipment. Encouragement will also be given to the establishment of various sophisticated services for the East Asian region: engineering, architectural and product-designing firms, computer software and programming, high-fashion textile and clothing designing, management-consulting and accounting firms, construction and other types of contracting companies, and legal, medical, social science, educational, and other applied professional research and advisory firms.

In addition, the government is vigorously promoting tourism and the attraction of regional and international conventions and conferences to the city-state. Singapore is envisaged as becoming the tourist "entrepot center" for the region, that is, the initial point of arrival for tourists where their subsequent tours of the neighboring countries will be arranged. The city-state's own attractions are being improved; meeting facilities for large conventions and conferences are being constructed.

Singapore's new development strategy clearly involves continued — indeed increased — reliance upon foreign direct investment. As the Finance Minister pointed out, the "multinational manufacturing companies have a scope for progressive growth in technological content in their manufactures, and consequently, a greater capacity for development of modern skills at all levels." Indeed, in many cases, these techniques and skills could not be transplanted to the city-state by new or inexperienced local firms under licensing agreements, as could be done with the simpler, standardized technologies of older industries. Hence, the new strategy means that the foreign companies must continue to be attracted to Singapore both individually and in joint ventures with local interests and the government.

If Singapore achieves even moderate success in its new strategy, it will be contributing not only to the well being of its own population but also to the technological and intellectual resources of Southeast Asia. Success will require a great deal of political skill along with the economic vitality that has been amply demonstrated, and while the outcome is not assured, it does appear that the prospect is, on balance, a favorable one if the present internal unity and intelligent guidance can be maintained.

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